THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—Liebig.

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For the Farmers' Cabinet.

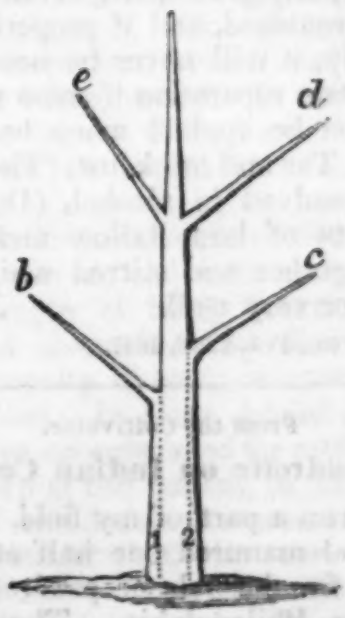
Pruning Young Trees.

As the time will soon be here when many commence to *mutilate* their orchards and nurseries, it may not be inappropriate to make some remarks on the best manner of, and time for, performing this important operation.

The following system I have practiced for years and taken some pains to inculcate, and if its importance can be brought before a class who rarely read, and *never purchase*, such valuable works as Downing's, Thomas', or Elements of Vegetable Physiology, my object will be accomplished.

Trees of two years growth—and here let me remark, that if trees of proper form—not too high, and sufficiently thick near the earth to sustain their height, were more in demand, interest, if no higher motive, would soon prompt nurserymen to furnish such, instead of the switches now offered—are preferable. These, if properly grown, will require, when transplanted, no stakes to destroy their bark, retard their growth and circulation of sap, but may be fastened by raising around their base a hillock of earth six or nine inches high.

Discrimination and judgment now become necessary, because the stalk increases in thickness only as the number of branches and leaves increase; therefore, permit all new shoots to grow one year,—at least enough to keep up a due proportion between thickness and height. The ascending sap undergoes changes in the leaves, and only then returns as *proper juice*, to deposit a layer of wood; it will therefore be perceived by the annexed rude drawing, that if the



branches *b* and *c* be removed early in the season, the trunk will then receive a woody

layer only from *d* and *e*; but if *b* and *c* had not been removed, then an additional layer 1 and 2 from them would have increased the thickness in proportion to their amount of leaves. After the first year's growth, we may occasionally remove or shorten some of the largest branches,—permitting young shoots to grow,—about midsummer, or at any time while full of leaves; because then the descending *proper juice* will soonest repair the injury. The reason for removing some, and permitting other shoots to grow, is obvious. If removed before attaining to large size, the injury to repair will be less and sooner accomplished. After the trunk has size and strength to sustain a good top without growing crooked, at what height should be the first branches? When ploughing and thorough cultivation are to be performed (and in orchard culture they always should) seven feet from the ground is quite low enough. Some prefer eight or nine. There is a difference, too, in the growth of trees. The yellow Bellfleur and Smokehouse, both well adapted to—and the latter originating in—this State, require to be trimmed high.

How long, some one asks, will it require to do all this; and will not early bearing be thereby retarded? There are trees in this neighbourhood of eight years growth—five from the nursery and three when procured—which are twelve and a half inches in circumference one foot from the ground, and nine at the first limb six and three-quarter feet from the ground, perfectly straight, which have never borne fruit it is true; but is it not preferable to have trees grow rapidly while young—which is always antagonistic to the production of fruit buds—and form fine large heads that will eventually bear a greater quantity and finer fruit? After the head is properly grown, large branches should never be removed, and if properly attended to annually, it will never be necessary. It will facilitate reparation if some water-proof composition be applied when branches are removed. Tar and brickdust, (Thomas) gum shellac dissolved in alcohol, (Downing) or equal parts of lard, tallow and beeswax, melted together and stirred while cooling, will answer very well. J. K. E.

Lancaster co., Feb. 22nd, 1847.

From the Cultivator.

Poudrette on Indian Corn.

I SELECTED a part of my field, an acre of ground, and manured one half of it in the hill, with five bushels of poudrette, manufactured in Philadelphia. The rows and hills were each four feet apart. The ground selected was, as near as I could judge, of the same quality; if there was any difference, it was in favour of that part not manured. The soil was a light micaceous loam, but quite thin, as you will see by the yield. It came up finely; the corn on the part that was manured, grew vigorously, keeping far ahead of the other, throughout the season, and ripening at least one week earlier. When harvested, the part that was manured yielded thirty-three baskets of ears, making sixteen bushels of shelled corn, and the other half only seventeen baskets, or eight bushels—leaving me eight bushels of sound corn to pay for the poudrette. The

Dr. and Cr. account would stand thus:

8 bush. corn at 60 cts. per bush., is		$4 80
Extra fodder—there was at least double the quantity on this part that there was on the other,		1 00
		$5 80
Dr. To 5 bus. poudrette, 35 c. is	1 75	
Spreading the same,	0 10	
Husking, hauling and shelling 8 bus. 3 c.	0 24	
		2 09
Gain by using this manure (per ½ acre)		$3 71

A part of the same field was manured in the same manner with guano, and at the same cost per acre. One barrel of guano was mixed with two of unlixiviated ashes, and the same quantity of clear sand, and spread on one and an half acres of ground. This part neither grew so well, nor did it yield so well as that along side of it, which had been manured with poudrette. Although we took great pains to sift and mix it thoroughly, yet many of the hills were killed, and some so stunted that they did not recover throughout the season.

One of my neighbours seeing what poudrette had done for me, for two years in succession, on my wheat crop, planted some two or three acres, of as poor land as you could find anywhere—in fact the soil had been entirely washed away—with what we call Canada corn, and manured it in the hill with this manure; a part he left unmanured. On the first part he had a fair crop; but upon the other there was not enough, I had almost said, to pay him for his seed, certainly not for his labour.

What these manures may do, when used upon soils of a more productive quality, I do not know, but I am well assured, that when used upon thin soils, this is a most valuable manure; and those of us in this neighbourhood, who have used it in this manner, firmly believe that we receive the price of our

labour and expenses, in the increased value of our provender alone. The coming season I shall plant my corn on soils of various degrees of fertility, and shall then test the matter more fully. PENNEPACK.

Lower Dublin, Pa., Dec. 19th, 1846.

Premiums of Agricultural Society.

AT a stated meeting of the Philadelphia Society for promoting Agriculture, held on the 3rd inst., A. S. Roberts, President, in the chair. After the minutes of the last meeting were read, the committee appointed at a former meeting to prepare a list of crops for which premiums should be offered the ensuing season, made the following report, which was adopted, to wit:

For the best field of wheat, not less than three acres, $10.

For the best field of rye, not less than three acres, $8.

For the best field of oats, not less than three acres, $6.

For the best field of corn, not less than five acres, $10.

For the best lot of potatoes, not less than one acre, $10.

For the best lot of sugar beets, not less than half an acre, $6.

For the best lot of ruta-baga, not less than half an acre, $6.

For the best lot of carrots, not less than one-quarter of an acre, $6.

For the best lot of parsnips, not less than one-quarter of an acre, $6.

For the best lot of field or flat turnips, not less than half an acre, $6.

For the second best crop of each of the above, a copy of Colman's Journal will be awarded.

On motion of S. C. Ford, a committee was appointed for the purpose of fixing the time and place of holding the Society's annual exhibition, and to report thereon at the next stated meeting. Extract from the minutes. AARON CLEMENT, *Rec. Sec.*

Philadelphia, March 5th, 1847.

Dairy Husbandry.

ENGLAND has long been celebrated for its dairy products, at least for the quality of its cheese; and this is often of a superior description.

1. *Butter.*—The butter in England is, much of it, delicious, especially that which is made in private families, where it is churned from new and sweet cream every morning, and brought fresh from the churn to the breakfast table; and more particularly when the butter is made from the cream of an Alderney cow. The common market and shop butter, however, is of the same various character with that in our own markets, with no larger proportion of very excellent butter than is to be found in the markets of Boston, New York, and Philadelphia. Indeed, much of the butter found in the market of the last named city, for its freshness and deliciousness, is nowhere surpassed. The butter in England is generally sent to market fresh, and you are left to salt it at your pleasure, as you use it. The salted butter, in tubs or firkins, is mostly imported from Ireland, or the continent. Even this, however, is not heavily salted. In most of the markets a good deal of butter made from the whey of cheese, is sold at a reduced price. It is of inferior taste and quality, and is bought by the poor, or to be used in cooking, where, like a good many nameless things, it may be thoroughly disguised, and pass without detection.

The Dorsetshire butter, which stands at the head of the market, comes packed in neat casks of about thirty pounds each; but is very lightly salted, and of course will not keep long. It is likewise sent up to London in lumps, perfectly fresh for the table. Its quality is excellent. The table butter likewise, from Epping, and especially Aylesbury, is of the best description.

The Devonshire butter is almost universally made by first heating the milk, just so much as to cause the escape of the fixed air. In twelve hours the cream is all brought to the surface, and in a state of consistency to be easily taken off. It is a disputed point, whether as much butter is obtained in this way as by the ordinary mode of letting it stand, without being heated, a much longer time. The butter is thought to acquire in this way a peculiar taste, but it is by no means unpleasant. The skimmed milk remaining is perfectly sweet, and appears the richer for being heated. In this way is obtained the famous clotted cream which is to be found on the hospitable tables of Devonshire, and is a great luxury.

Glass milk-pans, made of bottle glass, are much approved, and with proper care, are in no danger of being broken. They recommend themselves by their cleanliness and incapacity of rust, or corrosion, or decomposition. In some dairies I found shallow leaden troughs used for setting the milk, with a tap at the bottom, so as to draw the milk off and leave the cream. Some persons maintain that, the more shallow the pan, the more cream in proportion will be obtained; but in a large dairy in Scotland, the milk is always set in deep casks and

tubs. Such is the diversity of opinion every where prevalent. The Scotch had no fears that the cream would not find its way to the surface unless the principle of gravitation were to be reversed. One of the best dairy women in the country never suffers any water to be applied to the butter when taken out of the churn, a practice not uncommon.

2. *Cheese.*—English cheese has long been celebrated for its excellence, but it is far from being all equally good. The Stilton cheese stands, by general admission, at the head; the Cheshire, the Cheddar, the Gloucestershire, and the Wiltshire, have their different partisans, and though they differ from each other, are preferred according to the particular tastes of those who eat them. The celebrated Dunlop cheese of Scotland, which is certainly excellent, is made with one fourth part of ewes' milk.

It cannot be expected that I should go into all the processes of the dairy. My remarks must be general. All dairymen seem to agree, that, in cheese-making, much depends on the character of the soil upon which the cows are fed. Wet and low grounds, producing a rank and coarse herbage, are unfavourable, and so are the artificial grasses given to the cows green. An old pasture and a dry soil are most desired; and it is said, that the poorer the pasture, the better the cheese. Wet and cold pastures have been converted into good cheese grounds by thorough draining and cleaning. The quality of the cheese depends, more than upon anything else, upon the skilful and careful management of the dairymaid herself. This is to be learned by practice, and very little useful direction can be conveyed in words. The making of cheese is a chemical operation. We shall be glad when chemistry is so applied as to determine the rules by which success may be made certain.

The average quantity of cheese made is reckoned at one hundred and twelve pounds to one hundred gallons of new milk. Few cheeses are made wholly of new milk, being in general what are called *two meal* cheese, and the cream being taken off the previous night's milk, to be converted into butter. In this case, according to the practice of an excellent Vermont farmer within my knowledge, the buttermilk would go back to the cheese and serve to enrich it. The cheeses in general are made very hard, which is owing, in the first place, to cutting the curd very fine, and next, to the severe pressure which is given to them. The rennets are here called *vells;* and the best are imported from Ireland. At one of the principal dairies which I visited, it was customary to put six skins, at the beginning of the season, into two gallons of brine, and use this liquid for forming the curd, in such quantities and at such time as required. A quantity of lemon was also put into the liquid, to correct the taste and give it a flavor; but I believe with no advantage to the cheese. It is strongly urged not to use the rennets until they are a full year old, as otherwise they cause the cheese to heave and to be full of holes. In most dairies it is customary to scald the curd with hot whey, but by the best dairywomen this is disapproved, as tending to impoverish the cheese. The colouring the cheese with anatto is not universally practised, nor does it much benefit the sale, where the character of the dairy is known.—*Colman's Tour.*

Subsoils and their Management.

The efficiency of soils for producing good crops, depends much on the subsoil. If this consists of impervious clay or hard-pan, so as to oppose a ready escape to the water, it is evident the accumulation of the heavy rains will materially injure the vegetation above them; for it is certain that while nothing is more essential to productive crops than an adequate supply of moisture to the roots, nothing is more injurious than their immersion in stagnant water. When such is the character of the subsoil, it should be under-drained if possible, or if this be not practicable, it should be broken up and loosened by the use of the subsoil plough.

A variety of ploughs have been constructed for this purpose, but unless it be intended to deepen the soil by an admixture of manures, care should be taken to avoid bringing up the subsoil to mix with that on the surface. In addition to the more ready escape of water thus secured by breaking it up, the air is also admitted, which enables the roots to strike deeper, and draw their nourishment from a much greater depth. The increased distance through which the roots penetrate, furnishes them with an additional moisture during a season of drought, thereby securing a luxuriant crop when it might otherwise be destroyed. This is frequently a great item in the profit of the farmer; as besides the increase of crop which follows a hot dry season when a full supply of moisture is furnished, the product is usually of better quality; and the general deficiency of agricultural produce which ensues from seasons of drought, makes his own more valuable.

As a result of this practice, there is also a gradual increase in the depth of the soil, as the fine and more soluble particles of the richer materials above are constantly work-

ing down and enriching the loosened earth below; and in time this becomes good soil, which in proportion to its depth increases the area from which the roots derive their nutriment. So manifest are the advantages which have followed the use of subsoil ploughs, that they have been extensively introduced of late years among the indispensable tools of the better class of agriculturists.

When the subsoil is loose and leechy, consisting of an excess of sand or gravel, thereby allowing the too ready escape of moisture and the soluble portions of manures, the subsoil plough is not only unnecessary, but positively injurious. In this case the surface soil should be somewhat deepened by the addition of vegetable manures, so as to afford a greater depth, through which they must settle before they can get beyond the reach of the roots; and the supply of moisture is thereby greatly augmented. It is better, however, to keep lands of this character in wood, or permanent pasture. They are at best ungrateful soils, and make a poor return for the labour and manure bestowed upon them.

If there be a diversity in the character of the sub and surface soil, one being inclined to sand and gravel, and the other marl or clay, a great improvement will be secured by allowing the plough to reach so far down as to bring up and incorporate with the soil some of the ingredients in which it is wanting. This admixture is also of remarkable benefit in old or long cultivated soils, which have become deficient in inorganic matters and in their texture.

The effect of long continued cultivation, besides exhausting what is essential to the earthy part of plants, is to break down the coarser particles of the soil, by the mechanical action of the plough, harrow, &c., and in a much more rapid degree, by the chemical combinations which cultivation and manuring produce. A few years suffice to exhibit striking examples in the formation and decomposition of rocks and stones. Stalactites and various specimens of limestone, indurated clays, sandstone and breccias or pudding stones, are found in favourable circumstances, almost under our eye; while some limestones, shales, sandstones, &c., break down in large masses annually, from the combined effect of moisture, heat and frost. The same changes on a smaller scale, are constantly going forward in the soil, and much more rapidly while under cultivation. The general tendency of these surface changes is towards pulverization. The particles forming the soil, from the impalpable mite of dust to the large pebbles, and even stones and rocks, are continually broken up by the combined action of the vital roots and the constituents of soils, by which new elements of vegetable food are developed and become available, and in form so minute, as to be imbibed by the spongioles of the roots, and by the absorbent vessels, they are afterwards in their appropriate places in the plant. Where this action has been going on for a long period, a manifestly beneficial effect has immediately followed from bringing up and mixing with the superficial earth, portions of the subsoil which have never before been subject to cultivation.

A subsoil which is permeable to water, is sometimes imperceptibly beneficial to vegetation, not only by allowing the latent moisture to ascend and yield a necessary supply to the plants, but a moisture frequently charged with lime and various saline matters, which the capillary attraction brings from remote depths below the surface. It is probably from this cause that some soils produce crops far beyond the yield which might be reasonably looked for from the fertilizing materials actually contained in them. This operation is rapidly going forward during the heat of summer. The water thus charged with saline matters ascends and evaporates at and below the surface, leaving them diffused throughout the soil. After long continued dry weather, a thin white coating of these salts is frequently discernible on the ground.

Where rain seldom or never falls, this result is noticeable in numerous and sometimes extensive beds of quiescent—not shifting—sand. Deposits oftimes occur several inches in thickness. Such are the impure muriate of soda and other salts in the arid deserts of California; in the southern parts of Oregon; the nitrates found in India, Egypt, Peru, and various parts of the world.—*Allen's American Agriculture.*

From the Cultivator.

Farming in Holland.

ANTWERP is not at a very great distance from the Dutch frontier. The border land between Holland and Belgium, is a wide desolate looking tract of sandy moor, for the greater part entirely neglected. There was, however, in many places, a considerable thickness of organic matter above the sand, which would go far towards making an excellent soil. In some places I saw holes where a substance resembling marl or clay, had been raised to the surface and laid in heaps. Were it either marl or clay, it would be highly useful on such light sandy soils. Great improvements are commencing

here, and some flourishing farms begin to appear amidst the surrounding desolation.

The Crown Prince has large possessions on these moors, and energetically promotes and encourages everything promising to advance cultivation there.

I was not able to ascertain, except by a hasty glance in passing, the system upon which these improvements proceed. Each one of the fields was enclosed by an open ditch, that indispensable accompaniment of a Dutch farm. In many cases, the turf, bushes, &c., &c., were burned, being collected in heaps; and the ashes afterwards spread over the whole surface.

After passing Grootrunslert, the first town in Holland, we entered a fine agricultural district. The crops were all thriving, and the fields bore evidence of careful and laborious attention. This district, North Brabant, seems to be all drained as thoroughly as the nature of the case will admit. The summer level of the water is generally not more than 18 inches or two feet below the surface, and there is scarcely any fall; in the winter the whole country is frequently covered with water for months. The houses placed on slight elevations, and the roads on embankments, are alone visible. Such was the case in January of the present year, when I passed through this very district. These circumstances all united, render it necessary to make the drains large and open, thereby interfering, of course, to a considerable degree with economical cultivation. These ditches become grown up and choked with weeds every year; in all directions we saw men cleaning them with a species of rakes, drawing the vegetable masses brought up directly into boats, or forming heaps on the land. These cleanings of the ditches must form an important item in the Dutch farmer's list of available and effective manures. In some places I have seen men dipping up the black muck from the bottoms of the canals, and laying it up in heaps on the banks. This mud, from its black appearance, must be rich in vegetable decomposing matter, and very well fitted to form compost heaps, or even to spread directly upon the land, after a winter's exposure to frost and warmth alternately. The large ditches on almost every farm form a kind of canal, navigable by boats carrying several tons; in these manure is often carried from one part of the farm to another, and the products of the various fields brought home. On some of the farms, horses would scarcely be necessary, except for ploughing. Farm vehicles seemed very few in number, and those few awkward in shape, especially the wagons, with high and narrow bodies, greatly elevated from the ground, and rising at both ends. From the forward axletree a stick three or four feet long turns upwards, and curls over towards the front board of the wagon box; this is generally terminated by a brass knob, which, in well regulated establishments, is kept scoured to a great degree of brightness. I had no opportunity of seeing any of the farming implements. I expect to find the Dutch far behind in this respect.

About half way between Antwerp and Utrecht, we passed through Breda, a large and very strongly fortified town. It is entirely surrounded by low, marshy ground, and in winter the water in the ditches is nearly on a level with the streets. After leaving this place we came to a broad tract of rich, fertile land, partly a rather stiff clay, but afterwards becoming a fine light loam in appearance. Both of these kinds of soils appeared to be of great depth. The draining was as perfect as possible under the circumstances, and as I have described above; the water standing from eight to eighteen inches below the surface. The crops on the whole of this tract were remarkably luxuriant. Of course we could say nothing as to the grain crops, but the grass and the turnips particularly arrested our attention. The turnips seem universally to be sown broadcast, and are not thinned out; and the consequence is a great mass of leaves and stalks. How large the roots were we had no opportunity of judging. A large farmer living in the neighbourhood of Breda, rode with us some miles, and gave us much information as to his own farm and the practices of the country. I think the Dutch farmers and proprietors in general can hardly equal this gentleman, who spoke French, German, and Italian, and read English with ease. The learning of foreign languages is, however, in so small a country as Holland, a matter of necessity to any one who ever goes a hundred miles from home.

We learned from this gentleman that in his section, at least, the Dutch are very deficient as to rotation of crops; in fact they have no rotation at all; they take as many successive crops of grain as they choose, or as they can. The land there is so good that this system may be carried on for a long time; but in many sections of the country I should think that they would be driven to a different course.

Yours very truly, John P. Norton.

Utrecht, Nov. 20th, 1846.

A vegetable seldom seen, and little known, the Celeriac, was lately produced at our Horticultural Society.

The effect of Whitney's Cotton-Gin on the Cotton Husbandry of the United States.

In 1793, the year of the invention, the whole cotton crop of the United States was 5,000,000 lbs., and the total *exportation* 487,600 lbs. In 1795, when the cotton-gin was first extensively introduced into Georgia and South Carolina—then the principal region of that production—the whole crop increased to 8,000,000 lbs., and the exportation to 1,601,760 lbs. In 1800, when the machine had been thrown open to the people, without limitation, from regard to the legal rights of the patentee, the total production of cotton in the United States during the year amounted to 35,000,000 lbs., of which 17,789,803 lbs. were exported. In 1805, the whole production was 70,000,000 lbs., and the amount of *upland* cotton exported 29,602,428 lbs.—(value, $9,445,000.) In 1810, the crop was increased to 85,000,000 lbs., and the exportation of *upland* cotton to 84,657,384 lbs. In 1815, the whole of the United States crop was 100,000,000 lbs., and the exportation of *upland* cotton 74,548,796 lbs. In 1820, the whole United States crop was 160,000,000 lbs.; the exportation of *upland* 116,291,137 lbs., valued at $22,308,667. In In 1825, crop 255,000,000 lbs., exportation of *upland* 166,784,629 lbs. In 1830, crop 350,000,000, exportation 290,311,937. In 1835, crop 475,000,000, exportation 379,000,000. In 1840, crop 880,000,000, exportation valued at $63,870,307. In 1845, the United States cotton crop was 1,029,850,000 lbs., and the exportation of cotton 862,580,000 lbs.; the domestic consumption being 167,270,000 lbs.

The recent annexation of the immense cotton lands of Texas, the abolition of the import duty on American cotton in Great Britain, and the vast and rapid increase of the manufacture of cotton fabrics in all parts of the United States, are evidences of the certainty of a further increase in the production of cotton in this country. Enormous as has been the progress of this staple, from 1791 to 1845, it is destined to a yet greater extension in amount and value.

The exclusion of East India cotton from its previous monopoly of the markets of the civilized world, from the beginning of the present century, was mainly due to the introduction of the cotton-gin in the Southern States of the American Union, which substituted the rapid operations of machinery for the tedious and costly labour of human hands in the preparation of the crop for the use of the manufacturer. The recent attempts of the British Government and the East India Company to restore the successful production of cotton in Hindostan, have consisted largely in the introduction of American improvements, especially of "THE AMERICAN COTTON-GIN," into those provinces which are adapted to the culture. The greater cheapness of labour, and even the superior quality of the product—in the province of Dharwar,—were found to avail nothing, without the advantages of American machinery.

The pecuniary advantage of this invention to the United States is by no means fully presented by an exhibition of the value of the exports of cotton—amounting to more than $1,400,000,000 in the last forty-three years,—nor by the immense proportion of the means which it has furnished this country to meet the enormous debts continually incurred for imports from Britain and the European continent,—COTTON having for many years constituted one-half, three-fifths, or seven-tenths of the value of the exports of the Union. But it was the introduction of the cotton-gin which first gave a high value and permanent market to the public lands in the South-West. The rapid settlement and improvement of almost the entire States of Alabama, Mississippi, Louisiana, Florida, and Texas, is mainly due to the enlarged production of cotton consequent upon the invention of Whitney. The States of Georgia and Tennessee have also been largely benefited by the same means in the disposal of their domain, a vast portion of which must have remained unoccupied and valueless, but for the immense increase of facilities for the preparation of cotton for the market. In the three States of Alabama, Mississippi and Louisiana, the sales of the public lands of the General Government amounted to 18,099,505 acres, during the eleven years ending on the 30th of June, 1844—yielding to the national treasury more than $30,000,000. The sales of upland cotton lands by the United States land offices have amounted to many tens of millions of acres; and none have been sold at a lower rate than $1 25 an acre—a large proportion at a higher rate.

It is to be remarked, finally, that the cotton-gins now in use throughout the whole South are truly the original invention of Whitney—that no improvement or successful variation of the essential parts has yet been effected. The actual characteristics of the machine—the cylinder and brush—the sole real instruments by which the seed is removed and the cotton cleaned, *remain*, in cotton-gins of even the most recent manufacture, *precisely as Whitney left them.* The *principle* has not been altered since

the first cotton-gin was put in motion by the inventor, though great improvements have been made in the application and direction of the moving forces, in the employment of steam-power, in the running-gear, and other incidentals. Every one of the various cotton-gins in use, under the names of different makers, contains the essentials of Whitney's patent, without material change or addition. The brush and the cylinder remain, like Fulton's paddle-wheel, unchanged in form and necessity, however vast the improvements in the machinery that causes the motion.

A more imposing result of mechanical ingenuity directed to the benefit of a whole nation, and, through it, of mankind, has not been recorded in the history of the human mind. Certainly there is no patriotic American who will not rejoice to accord to this eminently useful, though basely wronged inventor, the judgment so well expressed by Mr. Lanman—that "Whitney earned the credit of giving a spring to the agriculture of the South, which has been continued, unimpaired, to this day—a credit that will endure while the cotton-plant whitens the plantations of the South with its snowy harvests, or the machinery of the cotton-factory clatters upon the waterfall!"—*Skinner's Farmers' Library.*

Observations on Cheese-making.

Cheese may be made from cream alone, or from the whole milk; the main object in either case being to separate the serum from the other materials. This is effected by curdling the cream or milk *by the infusion of an acid*, the refuse being serum or whey. No acidulous substance is found so suitable for curdling milk as *rennet*, which is formed of the gastric juice of a calf that has been fed on milk. There are various methods for preparing rennet for use, most dairymen having a favourite process of their own; the following can be recommended by the writer as a simple and easy process.

Take the maw of a newly killed calf and clean it, salt the bag, and put it into an earthen jar for three or four days, till it forms a pickle; then take it from the jar and hang it up to dry; after which it is to be *replaced* and tied down, the covering being pierced with holes to admit the air; and allowed to remain in the jar for twelve months. When wanted for use, a handful of each of leaves of sweet brier, dog roses, and bramble, with three or four handsful of salt, are to be boiled together for a quarter of an hour, when the liquid is to be strained off and allowed to cool. The maw is then to be put into the liquid, together with a lemon stuck round with cloves; and the longer it remains in the liquid, the stronger and better will the rennet be; *half a pint* of this liquid is sufficient to turn fifty gallons of milk.

There are various kinds of cheese made in England under the name of Gloucester, Dunlop, Cheshire, &c., each having properties peculiar to itself. I shall confine myself in these remarks to the cheese made in the county of Cheshire, and hence called Cheshire cheese.

It has been remarked, that although good imitations of the cheese made in some of the English counties have been produced elsewhere, yet in *no trial* has a cheese possessing *the true* Cheshire flavor ever been made. This is attributed to the abundance of the saline particles in the earth, resulting from the numerous salt springs in that county. Cheshire is almost entirely a dairy county, its arable husbandry being neither extensive nor of a superior character. It is said to possess from thirty thousand to forty thousand dairy cows; the quantity of cheese made annually is estimated at twelve thousand tons.

In making the cheese the practice followed is this; set the evening's milk *apart* till the following morning, then skim off the cream, put two or three gallons into a brass pan, which must be immediately placed in hot water and rendered *scalding* hot. Half of the milk thus heated is poured upon the *night's milk*, and the other half mixed with the *cream*, which is thus rendered *thinner*. This is done by the dairy woman while the others are milking the cows; the *morning's milk being immediately* added to that of the previous evening, the whole mass is set together for cheese. The rennet and colouring being added, the whole is well stirred, and a wooden cover put over the tub, with a clean linen cloth thrown over it. It in general requires one hour and a half before the milk curdles; and if the cream should rise to the surface in this time, the whole must again be well stirred, which is done every time the cream rises, until coagulation takes place.

When the curd is formed, if it be firm, it is cut with the cheese-knife, and then cut across, making the incisions about an inch distant from each other. The curd is then broken by the dairy woman, until every part of it is made as small as possible, about forty minutes being generally spent at this process, after which the curd is left about half an hour to subside, covered over with a cloth. It is then put into a favourable position into the tub to drain, and a weight of about sixty

pounds put upon it, in order to press out the whey, which is drained to the lower side of the tub and ladled out. When well drained the curd is turned upside down, and pressed as before. It is now cut into pieces, about nine inches square, which are piled one above another, and pressed both with the hand and the weight, so long as the whey continues to run out.

The pieces are then cut and broken very small, and salted at the rate of three handsful to each. They are then put into a cheese vat, furnished with a coarse cheese cloth.

The curd is heaped in the vat in a conical shape, the cone being covered with cloth, to prevent any curd falling off. As soon as the curd adheres together, a weight of about sixty pounds is put upon it, and several iron skewers are stuck through it by holes in the sides of the vat. These holes are made in order to allow any whey remaining in the curd to escape. The weight and skewers are then removed, and the curd is broken as small as possible *half way* down the vat. The pressing and skewering are again repeated, and a clean cloth is put over the upper part of the curd, which is then taken out of the vat and put into it again *upside down*, and broken half way down as before. When no more whey can be extracted, the curd is turned into the vat, and rinsed in warm whey. The curd is still kept above the edge of the vat, being bound round with strong tape to keep it in a proper shape.

The cheese is now put into the press which has generally the power of about fifteen hundred weight, and is then well skewered with strong pointed wires, eighteen or twenty inches long. The vat is furnished with holes at the sides to receive the skewers; and after being about half an hour in the press, the cheese is again turned, and supplied with a clean cloth. It is in like manner turned again and again several times for forty-eight hours, each time supplied with a clean cloth, after which it is put *mid-deep* into salt, where it remains for three days, its position being reversed each day. When taken out of the vat, it is put into a wooden hoop of the same breadth as the thickness of the cheese, and is placed on the salting bench for several days, as above mentioned.

The cheese is then washed in lukewarm water, and after being wiped, is placed on the drying bench, where it remains about seven days, being carefully turned each day, after which it is again washed and dried as before, and rubbed over with sweet butter. After this it is placed in the warmest part of the cheese-room, and rubbed each day with sweet butter for seven days.

These cheeses vary in size, being in some dairies nearly one hundred and forty pounds in weight. The quantity of salt made use of during the process is uncertain; three pounds to a cheese of sixty pounds is thought to be about the amount; but much of this is lost in the salting house. Whether the cheese acquires much saltness during the steeping and rubbing, is uncertain, though much salt is expended in these operations.

In operations so critical as those of the dairy, where any material alteration in the temperature will affect the quality of the cheese, this ought at all times to be carefully attended to. A thermometer ought not only to be in every milk house, but also in every byre, as extremes of heat and cold, or sudden changes in the temperature, have a great effect upon the secretion of milk. The temperature of the milk house ought never to rise above fifty-five nor sink below fifty degrees.

The usual colouring for cheese is annatto, one pound of which is sufficient to colour half a ton of cheese.

Cheese making in large dairies is very laborious employment. It is said to be work that is never done, and like most other kinds of labour, it is ill remunerated.—*American Traveller.*

Construction and Management of Hot-Beds.

THE prevalent opinion among farmers respecting *hot-beds*, is, that they are expensive articles, requiring the skill of professed gardeners to manage them, and almost entirely outside the range of farming economy. Both suppositions are decidedly erroneous, and we hope that every one who reads this will arrive at such a conclusion. We do not propose that every farmer should go into the regular routine of forcing vegetables, at extraordinary seasons; but that every one, however humble his circumstances may be, should, at least, have one hot-bed to forward such plants as he may want to cultivate in his garden, and which he has either to purchase from gardeners—and then get poor, badly grown things—or else wait for the regular process of open garden culture, which, in our climate, under the most favourable circumstances, will not allow him the taste of a vegetable until the summer is half gone. We are surprised to see farmers come to the city and purchase a dozen of poor, weak withered cabbage, tomato, or celery plants, when they might have raised an abundance at home, far superior, and in better season.

The value of culinary vegetables, as we have often said, is not at all appreciated by

those who, of all others, ought to appreciate it—the professed cultivators of the soil. No effort, worth speaking of, is bestowed upon them, as a general thing. We have seen what is called the gardens of some of the best field farmers in this county, produce little else but *weeds*, at a season when they should have been teeming with all the variety of healthy, nutritious vegetables. Let us urge upon them, for their own sakes, and for the credit of our agriculture generally, the importance of a reform in this regard. In the midst of the improvements of the day, the vegetable garden, that may contribute so largely to the health and comfort of every family, should surely not be neglected. Let it participate, largely and fully, in the improvement, and it will yield ample compensation. This is the season to make preparations while there is leisure.

A simple hot-bed for forwarding plants, such as cabbage, tomato, celery, brocoli, cauliflower, egg-plant, pepper, melons, cucumbers, &c., may be constructed by any man having but ordinary ingenuity. The size may be adapted to circumstances. For raising such plants as we have mentioned, a frame of about twelve feet long and six wide, which will allow of three sashes, each three feet wide, will be found large enough for any family. It should be made of common two inch plank—the back about three feet high, the front about half that, the ends having a regular slope from back to front. This will give an angle sufficient to throw off rain, and give the full benefit of external heat and light to the plants within. If the beds are narrow the front must be higher in proportion. The sides and ends are simply nailed to a strong post, four inches square, or more, placed in each corner. For the sashes to rest and slide upon, a strip six inches wide is placed across the frame, the ends mortised or sunk in the sides of the frame, so as not to cause a projection. The sashes are made in the ordinary way, but without cross bars; and in glazing, the lights are made to overlap an eighth or quarter of an inch, to exclude the rain. Such a frame, costing a mere trifle beyond the labour, will last for years. Where so large a frame as the dimensions here given, may not be wanted, an old window may be used for sash, and all expense of glazing be avoided.

Hot-beds should occupy a dry situation, where they will not be affected by the lodgment of water during rains or thaws. They should be exposed to the east and south, and protected by fences or buildings from the north and north-west.

Where it is intended merely to grow plants for transplanting to the garden, they may be sunk in the ground to the depth of 18 inches, and will in such a case require not more than two feet deep of manure; but when forcing and perfecting vegetables, a permanent heat must be kept up, and the bed must be made on the surface, so that fresh and warm manure may be added when necessary. A depth of three to four feet of manure will in such cases be wanted. Manure for hot-beds should go through a regular process of preparation. It should be fresh stable manure, placed in a heap, and turned and mixed several times, promoting a regular fermentation; thus it is made to retain its heat a long time, otherwise it would burn and dry up, and become useless.

Those who wish to force cucumbers, radishes, salad, &c., should begin, if the weather be favourable, about the latter end of February. For raising plants it is time enough to begin in March. In forcing cucumbers, Bridgeman says:

"The substance of dung from the bottom of the bed should be three to four feet, according to the season of planting, and the mould should be laid on as soon as the bed is settled, and has a lively, regular-tempered heat. Lay the earth evenly over the dung, about six inches deep; after it has lain a few days examine it, and if no traces of a burning effect are discovered, by the mould turning of a whitish colour and caking, it will be fit to receive the plants, but if the earth appears burned, or has a rank smell, some fresh sweet mould should be provided for the hills, and placed in the frame to get warm; at the same time vacancies should be made to give vent to the steam, by running down stakes.

"After the situation of the bed has been ascertained and the heat regulated, the hole should be closed and the earth formed into hills; raise one hill in the centre under each sash, so that the earth is brought to within nine inches of the glass; in these hills plant three seedlings, or turn out such as may be in pots with the balls of earth about their roots, and thus insert one patch of three plants in the middle of each hill. The plants should be immediately watered with water heated to the temperature of the bed, and kept shaded till they have taken root.

"The temperature should be kept up to 60 degrees, and may rise to 80 degrees without injury, provided the rank steam be allowed to pass off; therefore, as the heat begins to decline, timely linings of well prepared dung must be applied all round the frame. Begin by lining the back part first; cut away the old dung perpendicularly to the frame, and form a bank two feet broad, to the height of a foot, against the back of

the frames; as it sinks, add more; renew the linings round the remainder of the bed as it becomes necessary, and be careful to let off the steam, and give air to the plants at all opportunities.

"Give necessary waterings, mostly in the morning of a mild day, in early forcing; and in the afternoon, in the advanced season of hot sunny weather. Some use water impregnated with sheep or pigeon dung. As the roots begin to spread, and the vines to run, the hills should be enlarged by gathering up the earth around them, for which purpose a supply of good mould should be kept ready at hand, to be used as required.

"When the plants have made one or two joints, stop them, by pinching off the tops, after which they generally put forth two shoots, each of which let run till they have made one or two clear joints, and then stop them also; and afterward continue throughout the season to stop at every joint; this will strengthen the plants, and promote their perfecting the fruit early."

Radishes, lettuce, &c., may be forced in beds similar to that described for cucumbers, and the earth in the dung bed should be a foot deep. They do not require so much heat. The plants require to be well thinned out, air to be regularly admitted, and water gently and regularly supplied. In admitting air to hot-beds, a mat should be thrown over the opening to prevent the plants from being chilled.

Earth for hot-bed plants should, in all cases, be good rich friable loam, mixed with a third of well rotted manure, and some coarse sand to make it porous.—*Chicopee Telegraph.*

For the Farmers' Cabinet.

Corn—Lime, &c.

To the Editor:

Sir,—In the 6th No. of your last volume I addressed you a note under the signature of "A New Subscriber," and your correspondents having answered my inquiries, ably, in my opinion, I now feel bound to make all due acknowledgment. I say *now*, because I am somewhat more able to judge, by experience, of the advantages of their plans and recommendations.

"Barn." The answer in regard to this is published in Volume 10, No. 8, in March, from Chalkley Gillingham. I have never seen a plan of a barn to compare with it, and if the cost of the work done by his own hands and own materials are included, *it is very cheap.* I had commenced mine when the Cabinet came to hand with the plan, or I should have adopted it.

"Lime." The answer to my enquiries will be found in Vol. 10, page 218, from Dr. Elwyn. To be brief, it is worth more to me than all the information I have heretofore collected on the subject.

"Fattening Hogs," by A Vermont Farmer, Vol. 11, No. 5, page 150. I consider the combination of ingredients economical and good; but I am not instructed as to the mode of building the furnace, and it does not appear in what manner the contents are taken from the cylinder, which is probably ten feet high.

A concise account of the whole, and the *modus operandi*, would confer a favour on,

Yours truly,

E. Lewis.

Bloomsbury, near Havre-de-Grace, Md.,
Feb. 24th, 1847.

Can some of our correspondents supply the information asked by our friend? The directions in the article referred to are not explicit.—Ed.

Mount Airy Agricultural College.

The undersigned, having for a series of years devoted himself to the pursuit and practice of Agriculture, and having with deep concern regarded its condition as a Profession or Calling, could not but perceive that there was wanting, something indispensable to give Character and energy to an occupation, acknowledged to be the most useful, and embracing in its extended range the most numerous class of the people of these United States. He has therefore been long convinced that the great desideratum to be supplied, is an Education, commensurate with the high destinies of the Landed Interest—a training in Rural Economy pending the progress of the Student in Literature, so that when he shall graduate, he may not only have achieved the usual attainments acquired in mere literary Institutions, but exhibit a thorough and well grounded knowledge of practical and theoretical Agriculture and Horticulture, and possess in a superior degree, the presumable addition of good health and habits; being thereby the better fitted to enter upon the general duties of life, or into any profession as well as that of Agriculture. This presumed felicitous condition of the Graduate needs no demonstration, for it must be admitted, that the training and exercises of a properly conducted Agricultural College, will be naturally promotive of the priceless blessings of robust health, industrious habits, and a well regulated mind.

In the Eastern and middle States many laudable efforts of late years, have been made to improve and elevate the position of

the Farmer, but in the main, all have proved futile. In vain were Clubs and Societies formed; these could but invoke or inspire others to associate, and spend as they did, a little time and money in the cause; for all must now perceive that Education is the one thing needful, without which all efforts are unavailing, in furtherance of the great object in view. In vain did Capitalists, charmed with the Rural, and desirous of setting an example, purchase Farms, and quit the Cities; for they soon returned in disappointment, if not in disgust. Why? Because they had not been fitted by education for the pursuits of Agriculture. They had to depend on Hirelings, and no money could procure, for it is not procurable, the intelligence and skill adequate to the superintendence of the Yards, Stables and Stock—the Soils and Manures—the Crops and Cropping. Every Planter or owner of a Farm, should therefore be able to direct and instruct in all the leading interests and operations on his estate, for it as much as he can hope, or under the circumstance, expect, if his labourers carry out his orders in the detail.

To educate youth in the leading branches of popular learning as taught in our Colleges, with the addition of practical and theoretical Agriculture and Horticulture, with their attendant sciences, the Undersigned contemplates Founding an Agricultural College at Mount Airy, his residence, eight miles from the City of Philadelphia, a site favourably known for its Healthiness and Beauty, and as having until recently been, for many years, a seat of Learning, and now, in Gardens, Grounds, and Buildings, admirably suited for the purpose.

Students will be admitted at ten years old and upwards. The younger Pupils in the elementary branches of the Scholastic department will receive special and particular attention. The more advanced in years and learning, on entering will be classed according to their qualifications, and all will be carried forward as rapidly and understandingly as practicable, to a perfect and thorough completion. In the Agricultural department, a similar classification will be made in view of the age and capacity of the Students, and their exercises proportioned accordingly. Each little Boy will have his Budding and Pruning Knife, his miniature Rake and Hoe, and in fine weather will daily repair to the Gardens and Nurseries, and there be taught the nomenclature of Plants, flowers, &c., their culture, habits, and properties, and the necessary manipulations of producing: after an hour spent in this healthful recreation, he will return to the Class-room, and resume his studies. As he advances in years and strength, he will be introduced to the more weighty and important concerns of Agriculture, in which the senior Classes will be engaged. The exercise or labour of all, however, will amount to no more than will be deemed necessary for healthful recreation and change, to diversify and lighten the monotonous and depressing drudgery of the mere student. In this way, by a varied course of study, rural exercise, and popular Lectures, it is intended to accomplish the important work, and to give to Agriculture an impulse that cannot fail to raise it to the rank it should assume, and ought to hold throughout the land.

The Graduates of this College will be Scholars, and Gentlemen, who, if they inherit an Estate, will know more than their Gardeners, Overseers, or Land Stewards,—be conversant with the Breeds, Character, and properties of Stock, the mechanism and use of Implements,—the quality of Soils, and the adaptation of Manures, and withal, practical Surveyors; while the taste acquired for Rural Life, will render the management of their Plantations a pleasing occupation, combining both pleasure and profit. If on the other hand they should have to acquire an Estate, what other Graduates could hope to compete with them in the acquisition of Property and honourable fame?

These views are respectfully submitted by way of Prospectus, affording a glance at the aims and merits of the contemplated Institution, and for the purpose of eliciting such share of patronage as will encourage the undersigned to carry out his long cherished design. If, therefore, eighty students shall offer, on or before the first day of July next, he will open the College on the first day of September following, with a Faculty combining the best talent, both in Literature and Rural Economy.

The Terms will be *Two Hundred Dollars* per Annum, for Board and Tuition, payable half-yearly in advance—no extras, except for Modern Languages, for which it may be necessary to make some additional charge, all of which, when properly matured, will be stated in a special prospectus, when the requisite number of Students shall appear to be forthcoming.

Parents wishing to avail themselves of this plan of educating their Sons, will please address JAMES GOWEN, *Mount Airy, Philadelphia*, stating age, and acquirements in learning. It is requested that early application be made, as the opening of the College is contingent upon the number of Students offering, and as much of the *material* necessary to its perfect organization

must be withheld, until it is ascertained that sufficient patronage will be accorded.

A word as to the Undersigned himself.—To those who know him, 'tis needless to say, that this great undertaking is prompted by no interested motive whatever; for all the capital to be employed, and all the trouble and anxiety incurred, he expects not a dollar by way of profit or remuneration for his services. He therefore wishes to stand in the proper attitude before all, and leave to all the means of making a fair estimate, and coming to a proper determination so far as they may feel interested.

Respectfully,

JAMES GOWEN.

Feb. 22nd, Washington's Birth day, 1847.

Agricultural papers will please copy the above.—ED.

Soiling Cattle.

BY DR. FIELD.

[Read before the Farmers' Club of the American Institute, and communicated for publication.]

THE soiling of cattle has been highly recommended by our agricultural writers, and by many distinguished farmers who have employed the system advantageously.

During the last three years, I have kept my farm stock partially after this plan. I have seen many advantages result from it, but yet have become fully satisfied that soiling can be economically practiced only under certain favourable circumstances.

If land is valuable in consequence of its contiguity to a market, where a good price and ready cash can be obtained for its productions, especially milk; or if the grounds are laid out in lawns, covered with shrubbery, nurseries, young orchards, &c., then, if it is desirable to keep stock at all, it would be unquestionably best to soil them, so also it would be, under almost any circumstances, desirable to soil or keep up working cattle and horses, for they are then always ready for the yoke, or harness, without the trouble of going in the pastures for them; besides, it is much better to feed the animals with that kind of food which would be more proper for them while at work than grass only. Again; much would depend upon the description of produce that the farmer expects to obtain from his cattle. If he intends making butter, or cheese, then the soiling system would not answer. The only plan to obtain a good article of fine flavoured butter or cheese, is to afford the cows an unrestrained range in a good pasture. I think there must be, and it is the opinion of others, much better acquainted with the subject than myself, certain plants growing in the pasture, which give to butter and cheese their rich colour and flavor, which the cows find when they roam at large. At any rate, I never yet have seen finely coloured butter made while cows were kept up on any feed, and I have fed grass, clover, green oats, rye, and corn, cabbages, turnips, potatoes, beets, &c. I intended, to-day, to exhibit to the club a specimen of butter made from a cow fed with warm swill and hay. It was as white as lard, and almost as tasteless. A few days since I was in the cellar of a country merchant and saw there a number of specimens of butter from some of the best farmers of Dutchess county. Almost every parcel was of a white colour. I am aware there are large quantities of fresh butter sold in the winter and spring that possess a good colour, but only a little experience in the art of colouring is sufficient to give either cheese or butter any desired colour. The greatest advantage to be derived from soiling cows is the quantity of manure that can be obtained from them, and a regular and abundant supply of milk.

According to the experiments of Mr. Pell, which he communicated to the State Agricultural Society, published by them in their Transactions, for 1844, it would appear, that to keep cows, except for their manure, would be attended with ruinous expenses. Five cows gave, each, under the most favourable circumstances, sixteen quarts of milk. Fourteen quarts of good milk are allowed for one pound of butter. I do not believe that sixteen quarts of milk, from soiling, would more than make a pound of butter—at any rate, a cow that would average one pound of good butter per day, is a first rate cow. Estimating this butter at 1*s.* 6*d.* per pound, his five cows would yield 7*s.* 6*d.* per day. What would such an income do towards paying the expenses of the animals, buildings, land, seed, labour, &c. He made, however, a large quantity of valuable manure, but the bulk of this was straw, weeds, leaves, &c.

To make manure from the stock, it is necessary that they should be either enclosed in a yard, or tied up. The only reason assigned why the manure does not give its full benefit in pasturage is, that a great proportion of it evaporates. Those who soil their cattle, and turn them in a lot, therefore, lose the most valuable substances in the manure. It is, no doubt, better to give the animals the benefit of a small enclosure for exercise, &c., but yet, if it is desirable to make manure, these advantages must be sacrificed. I have always found it was better to keep stock tied up constantly than to suffer them to roam a part of the season; and then confine them at other periods—for they would al-

ways show its bad effects in their milking, and appetite for food. When animals are tied up constantly, but suffered to go to drink at stated intervals, they after a time, become accustomed to it, and do as well, as far as I have observed, as if turned out, especially when the pasturage was not regular, as it sometimes is in dry hot seasons. But yet this was only in reference to their condition and quality of saleable milk, not for the making of butter.

I would recommend that the ordinary crops of the farm, even such as clover or grass, should not be depended upon for soiling. The ground should be especially assigned for the purpose. It should be as near the animals as possible to save labor, and put in the best condition for producing a succession of luxuriant crops. A dry or wet season will then never disappoint the farmer, for if the land is ploughed thoroughly and deeply and highly manured, it will be so loose as to permit the roots to strike deep and obtain sufficient moisture, raised by capillary attraction from below, in case of a drought; or so porous as to permit the ready percolation of water in a wet season. All the crops for soiling should come in in regular order, and not too much ground should be sown or planted at a time, so that the crops may be fed before they are too old and strong. It is often said that these crops are too watery, and that they scour the animals; they do so oftentimes, because the feed is changed suddenly, but after a time they become accustomed to it. Feeding a little dry meal, and giving the animals the privilege of licking clay, will soon check the disorder. Lime water is also very good for that purpose. I believe that the following plan for raising crops for soiling would be found to answer the desired object. Let a proportion of land be prepared by deep thorough tillage and abundance of manure, and sown with rye. Thrice the quantity of seed should be used, and it should be sown about a fortnight earlier than usual. This rule affords the first cutting in the spring. A piece of clover should next be prepared by top-dressing and plaster; this would come after the rye. It could be cut until corn was ready, or as soon as the frost is out of the ground in the spring. Oats and field peas should be sown on rich well prepared ground. This crop will come in after clover, and, I think, would be a good substitute for English tares. It was the most abundant crop I have ever raised on my farm. When the weather is sufficiently warm, corn should be sown broadcast. This will give an abundant supply of feed until late in the fall. I prefer sowing corn broadcast to drills. It is much less trouble, and the stalk is made more tender. I prefer, too, to cut the corn when it is in full leaf, and not wait any longer. I have conversed with our largest dairymen, who have partially soiled with corn for several years. They all unite in the opinion that it is the best feed to give an abundant yield of milk.—*Farmer and Mechanic.*

For the Farmers' Cabinet.

Lime.

In the January number of the Cabinet, is an article on lime, from "Chambers' Information, &c." in which it is stated that "lime helps to fix the carbonic acid which is generated by the fermentation of putrescent manures in the soil, or which floats in the air on the surface of the earth, and it freely imparts this gas in union with water for the nourishment of plants." It is well known that lime unites with carbonic acid and thus soon returns to its primitive condition of carbonate of lime or lime stone; but that it freely imparts the carbonic acid for the nourishment of plants, is an assertion which admits of a doubt. The lime stone will yield up its carbonic acid when submitted to the action of a stronger acid, or when heated to a high temperature, as in lime burning.

Lime stone is soluble in water, which is impregnated with carbonic acid, but it remains lime-stone and does not part with any carbonic acid. The excess of acid in the water is not an effect, but the cause of the solution.

When carbonic acid has united with lime, water cannot dissolve it out. Farmers are deeply interested, and attention being eagerly turned to the subject of the operation of lime as a manure, every explanation is seized with avidity. It is better that experience in its use and effects should be our guide, however imperfect, than any false theory of its operation, which can only lead to erroneous practice. Respectfully,

Ellwood Harvey.

Chadd's Ford, Pa., Feb. 17, 1847.

For the Farmers' Cabinet.

Cultivation of Cranberries on Upland Soil.

The attention of the public having been called to the culture of this delicious fruit, and Mr. Gardner, of Massachusetts, having produced three hundred and twenty bushels to the acre, on upland soil; I proceed to give his mode of cultivation as follows: "I selected a piece of cold wet land that will keep moist through the year—remove the

top soil to the depth of two inches; this prevents all grass or weeds from growing, and the plants will require no cultivation after they are set out. After the top was removed, I harrowed the ground smooth and marked it out in drills, eighteen inches apart, and set in the plants four inches apart. Some I set out on sods fourteen inches square, placed in holes a little below the surface. They all flourished far beyond my expectation: the first year they put forth runners three feet long, and every vine was loaded with fruit. The plants can be set out from September to December, and from April to the last of June."

Yours, &c. B. G. Boswell.

For the Farmers' Cabinet.

Hydraulic Ram.

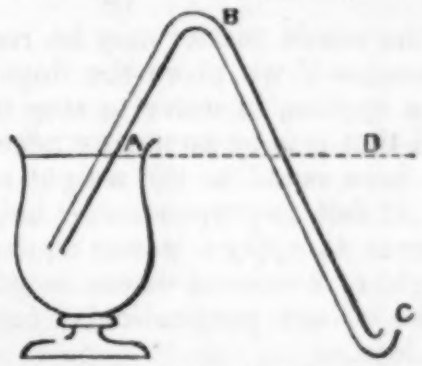
In the last number of the *Cabinet* is an article recommending the application of a syphon to the supply pipe of a hydraulic ram. It seems to me that the principles upon which such a modification depends, should be carefully examined, before any person incurs unnecessary expense in introducing it.

It is a settled principle in hydraulics, that the total efficacy of a water power is found by multiplying the quantity of water by the height of the fall. Now as no mechanical contrivance can increase power, it is evident that were there no loss from friction and imperfect application of the water to machinery, the whole effect would be of easy calculation. The only difference then, that results from the use of different kinds of machinery, arises from the more or less perfect manner in which they use the power of the water. Now I think it will be apparent from the following remarks, that the use of a syphon is a less perfect mode than a straight pipe, and of course should be discouraged. If it is a fact that a larger quantity of water was raised by H. H. Strawbridge when he used his bent pipe, it would no doubt be interesting to the readers of the *Cabinet* to have the discrepancies between practice and theory explained.

First—We shall endeavour to explain the principle on which the syphon acts; for it is plain the whole argument must be based on this. H. H. S. appears to suppose that the fall of water is increased by the employment of the syphon. He says, "The fall of water requisite to work it being very small, I continued to increase it by the improvement I am about to describe." And again, "In this manner, by employing a syphon instead of a straight pipe, conducting from the pond or spring to the ram, a fall of six or twelve inches, which would not afford sufficient power to work the ram, may be increased in power so as to equal that of a natural fall of many feet." Again,—"The power will of course be in proportion to the perpendicular height of the syphon; which cannot, however, be made to act if its elevation exceed 32 feet. This will give a power of 14 lbs. to the square inch, if merely the dead pressure be taken into consideration, but a much greater power, if the momentum of the descending column of water be calculated."

I now propose to show that the theory developed in these remarks is not sound.

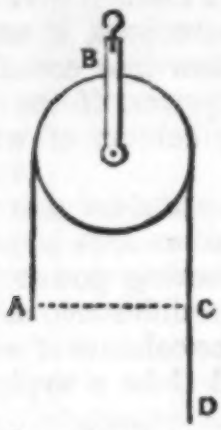
The whole moving power in the syphon depends upon the difference in the perpendicular height of the columns of water in the two legs. Let A B C be a syphon, the longer



leg being B C. The whole moving force, and of course the only force applicable to working machinery of any kind, is the column D C, A and D being on a level. The water in B D can exercise no effect on the machine—except from its momentum; a point to be considered hereafter—its whole force being expended in supporting the water in A B. This must be evident; for were the leg B C to terminate at D and be slightly turned up as at C, to prevent the water from dripping out, no water would be discharged by the syphon. This being the case, and the law, that every effect is in proportion to the force which produces it, being of universal application; the addition of the column D C cannot cause an action by the machine equal to that which would be produced by the whole water in B C.

I am aware that there is a popular notion, that the water in the shorter leg being raised by atmospheric pressure, the whole of that in the longer may be applied to the moving of machinery. This, however, is fallacious. It is true that the water is forced up by atmospheric pressure, and it is also true that the water in the longer leg is supported by atmospheric pressure to precisely the same amount. The two columns being thus kept in contact by the pressure of the air acting at the two extremities of the tube, the action of the water is, so far as its dead pressure is concerned, perfectly analogous to a

rope hanging over a pulley; and certainly H. H. S. will not contend that it requires a force at A equal to the weight of the rope B C D, to prevent the rope running over, but only a power equal to the weight of C D, A and C being on a level.



But the whole matter may be reduced to experiment,—if we place the finger on the end of a syphon, in order to stop it, it will be found that it is by no means necessary to apply a force equal to the weight of a column of 32 feet in perpendicular height. It is sufficient to apply a power equivalent to the weight of a column whose length is the difference of the perpendicular heights of the two legs.

Inasmuch then as no contrivance can increase the power of the fall, it might be supposed that the ram would work equally well, whether placed close to the spring, or at some distance from it: this however would be a hasty conclusion. A certain time, depending on the structure and size of the ram, is requisite for the perfect opening and closing of the valves; and to give that time, a long pipe is necessary. Could the valves be opened and closed instantaneously, it would be best for the pipe to be as short as possible; the diminished discharge from each stroke being more than counterbalanced by their increased number. But time is necessary; and as we must get it, it is best of course to do so in the most economical manner possible.

A certain velocity is necessary to close the escape valve. Now the whole moving force being that due to the perpendicular fall, the time necessary to acquire that velocity will depend on the length of the supply pipe, and be exactly proportional to that length; no allowance being made for friction. Consequently with a supply pipe 40 feet long, the strokes will occur about half as often, as when the pipe is 20 feet. But the column being twice as heavy, each stroke will discharge twice as much water; it being assumed that, in both cases, the valves have full time to act. The momentum and the number of strokes depending upon the length of the column; the height being supposed invariable, it will manifestly be best to use a straight pipe, because it is a well ascertained fact, that all curvatures diminish the discharge. If then the above principles be correct, the effect of H. H. S.'s machine would be increased by straightening his pipe and removing his ram to a distance from the spring equal to the length of his syphon.

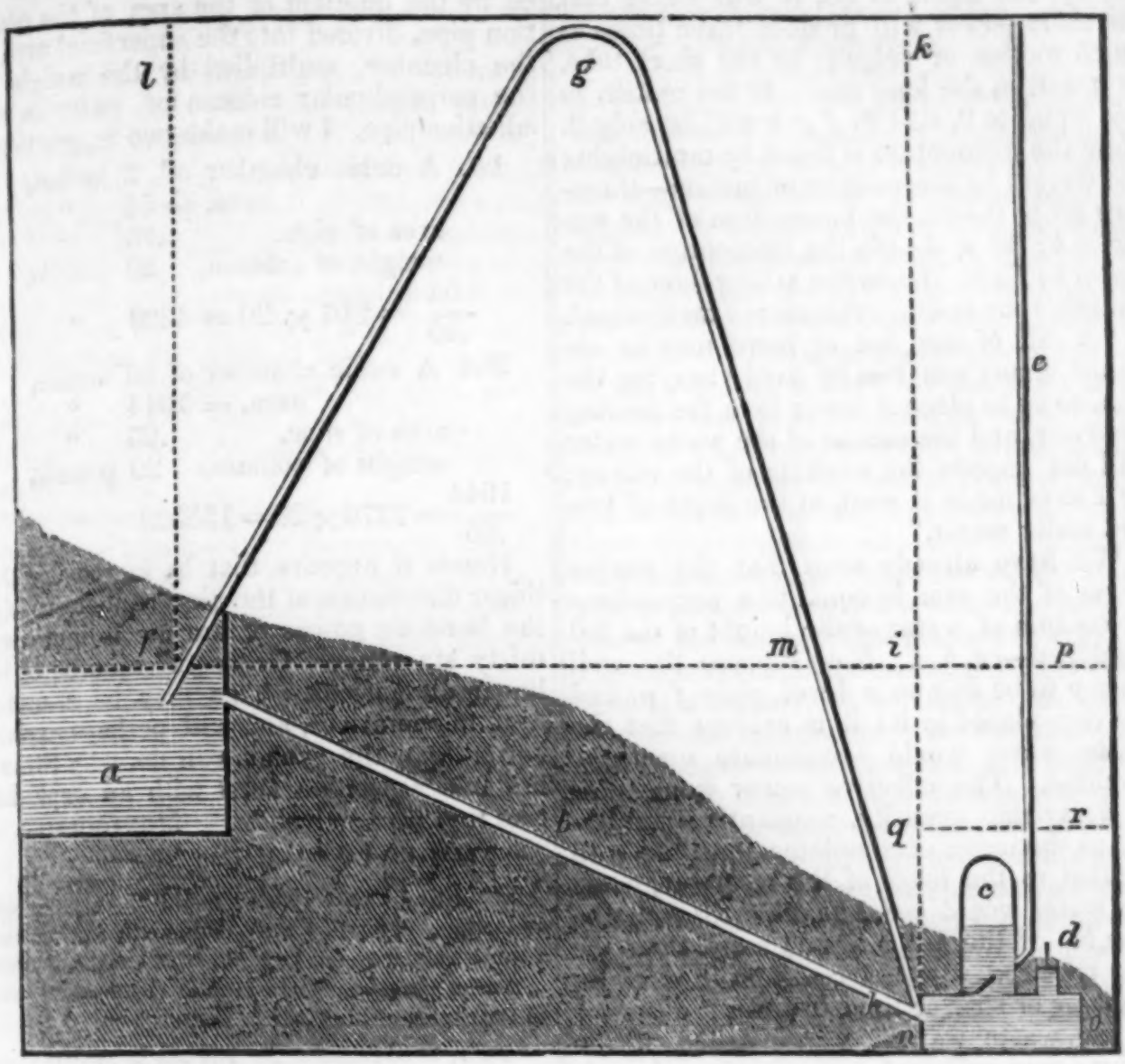
It may be asked if it will make no difference whether the strokes take place at long or short intervals. It undoubtedly does.

The escape valve is closed by the water pressing against its lower surface. This action depends solely on the velocity of the discharge. It can therefore make no difference in the time occupied by a stroke, whether this velocity is suddenly or more slowly acquired. Suppose we have two precisely similar machines worked by springs having the same fall, the supply pipes being respectively 40 and 60 feet long. Now in these cases the strokes will be made in the same time, while the intervals between them will in one case be twice as great as in the other. If then an interval of two seconds be required by the ram supplied by the shorter pipe, it will evidently require four seconds to acquire the necessary velocity in the other; therefore, if half a second is occupied in closing and again opening the valve, it is evident in one case the strokes will be made every two and a half seconds, and in the other every four and a half seconds; the number of strokes are therefore as nine to five, and consequently the machine with the longer pipe will discharge the most. No account has been made of the effect of friction, which, if the pipe is extended much will so far diminish the discharge, as greatly to lessen the efficacy of the machine. The most economical length will depend upon the size of the supply pipe. From 40 to 50 feet is thought to be the best length for pipes of two inches bore.

There is one other remark in the communication of H. H. S., which, as it may possibly lead to unnecessary expense in procuring large air vessels, requires a passing remark. He says, "The forcing power of the air vessel, like the power of a Bramah press, will increase in proportion to the enlargement of its horizontal area." He certainly could not have considered that it is only the pressure per square inch, that is to be taken into consideration; a pressure of 2000 pounds on a surface of 144 square inches, would produce no greater discharge than one of 500 lbs. on a surface of 36 square inches.

S. Alsop.

Wilmington, Del., Third mo. 1st, 1847.



For the Farmers' Cabinet.

Hydraulic Ram.

The statements of H. H. Strawbridge in the last Cabinet relative to the working of this machine, are so completely at variance with our old notions of things, that if they should be confirmed by future experiments, they will entirely "confound all our philosophy." It will afford occasion for inculcating some philosophical truths, to inquire what this new philosophy is?

"By employing a syphon instead of a straight pipe, a fall of six or twelve inches may be increased in power so as to equal that of a natural fall of many feet. The power will, of course, be in proportion to the perpendicular height of the syphon—not exceeding 32 feet. This will give a power of 14 pounds to the square inch, if merely the dead pressure be taken into consideration—but a much greater power if the momentum of the descending column of water be calculated."—says H. H. S.

Let *a* represent the spring or reservoir, *b* the induction or feeding pipe, *c* the air chamber of the ram, *d* the escape valve, *e* the eduction or raising pipe, *f g h* a syphon.

Now the dead pressure or effective weight of the water in the tube *b* is equal to a similar perpendicular column of the height *h i*.

The power of the syphon is known to be equal to the difference between the perpendicular heights of the ascending and descending columns—that is the difference between *h k* and *f l*, which is also equal to *h i*. Therefore the effective powers of the straight tube and of the syphon are precisely the same.

The motive power of the water is derived from the force of gravity acting upon it. In the syphon the columns *f g* and *g m* being of the same altitude and weight, exactly equipoise each other, and remain at rest; but when the additional column *h m* is appended to *g m*, it preponderates the opposing column *f g*, and the whole is put in motion.

Whatever may be the motive power employed, the motion produced will be in an inverse ratio to the quantity of matter moved. Now if the quantity of water in the straight tube be equal to 10, and that in

the syphon equal to 30, it will follow that the same power will produce three times as much motion or velocity in the short tube, as it will in the long one. If the motion in *b* is equal to 9, that in *f g h* will be only 3. Now the momentum is found by multiplying the weight by the velocity or motion—therefore $10 \times 9 = 90$, the momentum of the water in *b:* $30 \times 3 = 90$, the momentum of the water in *f g h*. Hence the acting force of the straight tube and the syphon are exactly equal.

"A fall of one foot or more may be obtained in any situation by partly burying the ram, so as to place it lower than the feeding reservoir, and the escape of the waste water will not impede the working of the valves; for I have made it work at the depth of two feet under water."

We have already seen that the motive power of the ram is equal to a perpendicular column of water of the height of the fall employed—or *h i*. Now suppose the well *i n o p* to be dug on a level plain *f p*, and the ram placed in it; it is evident that the waste water would accumulate upon the machine. The effective power would now be a variable quantity, constantly diminishing as the water accumulates, until the well is filled to the level of the reservoir, when the water would cease to flow through the pipe *b*. If the fall *h i* was more than the ram required, it would continue to work for a longer or shorter time beneath the surface of the waste water. For instance, if the fall *q i* was sufficient to move the valves, it would continue to operate until the water rose to *q r*, and then it must stop. It is therefore entirely fallacious to talk of *burying* the ram and then *drowning* him, unless there is more than the requisite fall at command—and then it would be unnecessary.

"The forcing power of the air vessel will increase in proportion to the enlargement of its horizontal area."

It is the momentum with which the water enters the air chamber, which compresses the air, and imparts to it its spring, or forcing power. The column of water in the eduction pipe, is a counterpoise to this momentum, and affords a correct barometrical measurement of its force. This force cannot depend in any degree upon either the form or size of the chamber—there can be no relation whatever between them.

By increasing the superficial area of the chamber, we add greatly to the expansive force or bursting power of the air and water contained in it—for it is known that fluids press equally in all directions, and consequently, that equal areas of the vessel will sustain equal degrees of pressure. The bursting power of the chamber is represented by the quotient of the area of the eduction pipe, divided into the superficial area of the chamber, multiplied by the weight of the perpendicular column of water in the eduction pipe. I will make two suppositions:

1st. A cubic chamber of 3 inches,
area, = 54 "
area of pipe, .25 "
weight of column, 20 pounds,

$$\frac{54}{.25} = 216 \times 20 = 4320 \text{ "}$$

2nd. A cubic chamber of 18 inches,
area, = 1944 "
area of pipe, .25 "
weight of column, 20 pounds,

$$\frac{1944}{.25} = 7776 \times 20 = 155520 \text{ "}$$

Hence it appears, that by increasing the linear dimensions of the air chamber six fold, the bursting power of the air is increased thirty six times. Or, as the squares of its linear dimensions. This may be a useful hint to operatives, and will perhaps explain better than the syphon can do, why Strawbridge's "machine burst with an explosion like that of a swivel." Montgolfier.

Sylvania, Second mo., 1847.

In addition to the two preceding Communications on the syphon, another was subsequently received from a much valued friend near West Chester, Pa. It did not seem necessary to insert the whole of this last. In the course of his letter he says:—

"There is no occasion for any one to hesitate about introducing the Ram for want of fall, for almost any farm will yield fall enough for the purpose by a little digging, and *three* feet, with a good head will be ample for slight elevations, say to *thirty* feet, or even more. I placed one on my farm last spring, which has been in operation since that time; the fall for the working of which was gained by sinking the ram three feet or more below the surface, and carrying the waste water away by means of a drain. The length of trenches dug to attain *eight* feet fall in this way, was something more than 260 feet. With the fall thus obtained, my supply of water is driven through about 1400 feet of lead pipe to an elevation of 115 feet, at the rate of *fourteen* barrels per day. The cost of thus introducing water to my barn, has been $225, as near as may be; the interest on which is $13.50, a cheap method of insuring a constantly flowing stream of water, to which your cattle can resort at pleasure.

"For trifling elevations *any* of the many *rams* now offered to the public would be found efficacious, but when considerable height and great distance are combined, it would be advisable to consult some one who is scientifically acquainted with the laws of the motions of fluids, least the too hasty adoption of false principles should end, as it surely will, in disappointment."

In the first column of page 218 of last number of the Cabinet, and the 35th line from the top, an error occurred; 80 should be 30.—Ed.

Cranberries.

This communication is sent for the purpose of calling more efficient attention to the cultivation of cranberries. While there is so much inquiry as to the best method of reclaiming peat meadows, it seems strange there should be so little in regard to making them productive, with the least possible alteration from their present condition. It is curious to see how far nature may be led by ingenuity from the original form of her servitude; but like other good servants, she will be more useful, when she has partly her own way, and her character studied while imposing duties.

The cranberry is a prominent natural product of these meadows; of its superior value as compared with any of the other fruits used for pastries and sauces, there is no question, while its beauty of color and fine flavor obtain this preference. Its keeping qualities allow of its being shipped to any part of the world. In England, millions of bushels of goosberries are grown at greater cost for the same purposes, and are of less value in all the respects above mentioned, especially in the all-important one of keeping.

The market for the cranberry may be stated as co-extensive with commercial intercourse; and to preclude diminution of price from over supply, even if every acre of peat land in New England should be devoted to its production.

The indigenous crop of this fruit affords much encouragement, and many instances show it to be the best use of these meadows. The greatest value of natural production has always been in the indications afforded by it to the cultivator. The writer has seen a rod square of cranberry vines, in a peat meadow belonging to Frederic Tuder, Esq., in West Cambridge, from which were picked upwards of three and a half bushels of the fruit, and it is supposed if every cranberry had been gathered, there would have been four bushels, or 640 bushels to the acre. What is produced by accident may with more certainty be produced by design. With this view, the gentleman above named, has planted upwards of five acres; and from his perseverance and sagacity in all his undertakings, there is no doubt that this enterprise will produce valuable results.

Some gentlemen have placed in the hands of the Society of Middlesex Husbandmen and Manufacturers, forty dollars, to be added to their premium of ten dollars "for the best product of cranberries in 1847, obtained through artificial cultivation from four rods square of peat meadow, to be accompanied by a full and clear statement of the methods adopted."—*Boston Cultivator.*

Agricultural Discussion, Albany, N. Y.

Mr. Johnson, Secretary of the State Agricultural Society, said he would at this time make some remarks on the Agriculture of England. It was a subject, to an American, replete with the greatest interest, especially if he views it for the first time—it being so entirely different from what he sees in his own country. It is essentially an old country; and you look in vain for the trees and stones and stumps so common on our farms, and in our country generally. Every thing in England is under the best cultivation; and the land is in the best condition for the farmer. The stones are all removed from the land, if we can suppose they ever were there. There is nothing to interfere with the prosecution of his plans. The manner in which the work is done differs essentially from the way of this country. The utmost care and precision, and neatness in every respect, are in their judgment the very best way to produce a great crop; a kind Providence has given them the land, and the very utmost preparation for the furtherance of the crop, which they derive from it, is alike their duty and their interest. English farming seems to have attained perfection, and yet they say it is but just begun—and they calculate on large advances; but how they are to make it, is not easy to perceive.

In the spring of the year, there will be seen on the farm a large collection of females, some of mature age, and some of tender years—frequently twenty, or thirty, or forty, in a field—following some old men with *scuffle hoes*, cleaning out the rows of wheat. Every where is witnessed the nicest care in cultivation, such as would be given here to the finest garden bed; and this is general—both where the drill is used, and where the seed is sown broadcast—the same attention to extract every thing calculated in any degree to impede the beautiful culture of the grain. He had found this very general, and in many fields which he saw, there was not to be seen a single weed. And when they are asked the reason of this extreme care and nicety, the answer is very readily given.

They pay so much for their lands, their manure costs so much, that it will be readily seen that there is a necessity for the cultivation of every part of their land. None of it is to be lost, if they would have any remuneration whatever for their labor; and we may well take into consideration, if the same perfect and systematic method is not the very best way for a good farmer in all

places. The wages of these females thus employed are, of course, far lower than wages with us, and it cannot be expected that we should adopt such practices with the usual price of our grain crop.

But, in the process of ploughing, there is no reason why we should not do as well as in England. Their furrows are from eight to ten inches wide—seldom exceeding ten; very straight—made with the greatest nicety and precision—the slice is of the same thickness all the way through, so that the sod does not decompose quicker in one place than the other, and the soil becomes equally pulverized; nor does the grain start unequally, nor the farmer lose as with us, a third of his crop by its unequal growth. They plough with horses, usually from three to as many as six, in single file, with one or two drivers—sometimes very young lads at the plough. The use of horses, as with us, is evidently becoming more frequent. This work is done with perfect neatness and care; often the result of the labour and experience of years on the part of the ploughman. In England, each individual does one kind of work, so that he understands it perfectly. There they have no such character as a man of all work. The ploughman attends to that work alone. He goes to his work early in the morning and breaks off about two, and then has the charge of his team. If any sods remain undecomposed, these females again appear with their baskets and gather them into heaps, when they are consumed, and the ashes scattered about the land. The roller and the crusher, the latter of which is very heavy, are freely used. The best cultivators distribute the seed by drills, and seed is saved by this, and the grain deposited and covered more uniformly—and the broad cast system seems on the retrograde.

There are no fences in England—the scarcity of timber is a sufficient reason—the hedges are very neat, and are attractive in their appearance to the stranger. Some farmers there are who, like some in our own country, let things go to loose ends, but in the midst of so beautiful and finely cultivated lands, those exceptions make but a poor appearance.

He had visited, with great satisfaction, the dairy districts of England, especially those of Cheshire and Worcestershire, our strongest competitors. One great principle pervaded them all. The first and second and last thing in the English dairy was *neatness*. Every thing about them was neat, and nothing unsavory was allowed to be there. This extended to the care and keeping of the cattle, and he had seen many stables, where the cattle were kept with the utmost nicety. This was a principle with the English in the manufacture of butter and cheese, and it would be in vain for our farmers to seek there a market for these commodities, unless these excellent qualifications had a rigid compliance.

The salt they use appears to give them an advantage over us. It is chiefly the Liverpool and of the Ashton brand. This appears absolutely necessary for the preservation and preparation of their fine butter. Our farmers, many of them, are following this example, and are incurring the expense of procuring foreign salt, rather than to buy our own at Salina.

The great objection there to our butter was that it was salted too much. The English had seen but little of our good butter. Most had reached their country under the denomination of grease. Even with us, the proportion of salt is often so great, that with the butter we take in our mouths, comes a lump of undissolved salt. Such carelessness must forever destroy our hopes of a market in England.

The condition of their cattle is most admirable. They are fatted to perfection. They vary from eighteen months to three years; few being sold in market over three years of age. You may see often 5000 fat cattle at once in the market at London, and out of the whole, there are every week immense numbers equal to the splendid specimens exhibited at our shows, such as would receive with us the first premium, and this not of one breed alone, but of several. The black cattle, Galloways and West Highlanders, may be said to stand at the head of the market, and command the highest price. The Herefords are next to the Scotch cattle, and are very fine animals. The Short Horns and Devons are also very choice and superior animals.

There were three descriptions of the black cattle, which I saw. The Galloway, without horns, the West Highland, and the Runts, equal to either, though of a much smaller size. Similar cattle are common in Anglesea in Wales.

The sheep are enclosed in hurdles on the ground, and fed on turnips, vetches, clover, early grass, and whenever one part of a field is finished they are taken to the other, which, after they leave it, is plowed up and used for grain. They go to market by railway, and are in the finest condition. 30,000 of them arrive in London weekly. Go and look at the immense number, and you would suppose there was enough to feed all England. On Monday morning early, you will find them all paraded for sale, and when you go at twelve o'clock you will find them all gone;

not one left, and the next week the same scene will be presented. Of the different breeds the Southdown may be considered among the best. There is a little Welsh sheep which is very popular. He had noticed them from the deck of the steamer in passing the coast of Wales, and they were as small apparently as lambs; and though the hills seemed almost bare of vegetation, yet small patches of pasture might be discerned, and by the aid of the telescope, paths by which the sheep finds its way from near the waves of the ocean to the top. These make the finest mutton in England. Then there are the Leicester and the Cotswold, and another black and white faced variety from Scotland, with long wool, which is a very superior sheep.

The condition of their laboring population is a very peculiar one, having striking features. He went among the laborers on a great many farms with perfect freedom. The name of America was every where a passport; and though it was then in the midst of the Oregon excitement, yet he did not hear, from high or low, rich or poor, any other feeling expressed towards America but the kindest. They all seemed to say, they would rather give all the disputed land up than have one day of war. Nothing but national pride would have ever led to difficulty. His only difficulty had been to get from place to place, such was the hospitality shown—such the anxiety manifested to hear all about America, that every where he received an English welcome.

All of them work, from the smallest child to the man of great age. They must all do so to live; for, except on some favored localities, where the landlords give liberal recompense, the wages of the best of them will not admit of their laying up more than about eighteen pence or two shillings sterling per week, when all were able to labor.

Their food differs from ours chiefly in this—that the laboring population eat very little meat. Their breakfast is of coffee, bread, oatmeal, &c. In Ireland they are very fond of potatoes; but he very seldom saw them use meat—certainly not on week-days—perhaps on the Sabbath they would have a little.

And yet they are almost universally healthy. He freely confessed that he had seen no finer looking set of men than were the English—and he credited the assertion that perhaps the finest looking race of men in the world were the English nobility. Their constant exercise out of doors contributed to make them remarkably healthy.

He visited Ireland—which was a remarkably fertile country—more so even than England; and if agriculture was carried there to the same perfection which it has attained in England, Ireland could support itself from its own soil with perfect ease. He was there in August, when the potatoe plague had just made its appearance. In July, when he had before seen the fields, every thing looked well, and every heart was filled with joy and gladness at the prospect. In three or four weeks the blight began, and there was exceeding distress in every part of the country.

No one can conceive how much the potatoe is planted. To every small cabin there is a potatoe patch. It appears to be almost their only subsistence. They raise a pig, sometimes some poultry, eggs, and now and then a cow; and out of all this they have to pay the landlord. So that their chief dependence is on the potatoe.

In travelling from Dublin through Drogheda to Belfast, he had met many very fine farms, some as good as could be found in the entire kingdom of Great Britain—all in fine order and looking very beautifully.

The tenantry are in a very low condition. In this country we have no human beings who live as many of them do. The shanties on our canals, compared to them, are splendid edifices! An Irish hut is made of mud. Sometimes there is a hole in the top for the escape of the smoke, but in many instances the only ventilator is the door. Pig, cow and hens all live in the same domicil with the children. They sleep all together, and he had never seen, in examining these abodes, *any thing like a bed.* And yet they all appeared happy and contented. All made him free of their house, and all received him kindly. There were evidently warm hearts found there.—*Ev. Journal.*

From the American Farmer.

The Potatoe Disease.

It may be concluded by many of our readers, that we devote more than a fair proportion of room to the consideration of this subject. Our excuse is in its vast importance. If we advert to the fact, that not only are districts in our own country seriously affected by this visitation, but that also kingdoms are convulsed with famine and fearful forebodings of the future, we cannot fail to perceive in a moment the reasonableness of giving to it a large share of attention. We have no theory of our own. We believe it is among the inscrutable dispensations of Divine Providence. If science or experiment or any thing else can discover a remedy, it will be well. We feel bound to throw before our readers, much of what seems calculated to give information in the matter.—Ed.

To Robert Sinclair, Jr. Esq., Baltimore.

December 20th, 1846.

My Dear Sir,—Your very kind letter reached me in due course of mail, but really my time has been of late so occupied by sun-

dry claims, (wherewith it was wholly absorbed,) that between *law*, *farm*, and private affairs, I have hardly had the time to kiss the little girl, box the boys, and say a gentle word to the "*better half*" of my humble self. Christmas is coming and so too I trust is a little leisure for me. Therefore, here the fourth day from that best of days in the year, I find a moment to answer your letter. I wish that my ability and experience allowed me to answer it as becomes the subject matter of yours to me. "The Potatoe Disease," is a prolific source to exercise the mind upon—it has engaged the ablest pens in the world—it has fired the imagination of the poets, and called out the deepest philosophers in the most learned and abstruse defences of favorite theories. And it has at the same time called out the honest thoughts of the truly practical and intelligent among our honest and *intellectual Farmers*. Hence, I have never written a line or a word on the subject, and should not now, but that courtesy required me to answer your letter, if for no other reason, to thank you for the excellent treatise you sent to the "Farmer," for December. Your views and suggestions are excellent, as every reader will admit, who reads and reflects upon your treatise I now refer to.

Not one of the many writers have found out the cause or even the probable cause of the *disease*, therefore no specific remedy has been discovered, and cannot be discovered till the cause is positively known.

I am too unlearned in the sciences to attempt an explanation of the large portion of natural phenomena coming under my daily observation; or to explain the connection that exists in many cases between cause and effect. To those more learned, I leave the truth after I have stated my views, based upon experiments and ascertained data. I give you my opinion, upon what it is founded, but the *why* and *wherefore* it is so, you must get some one far greater than I, to expound to you. The cause of the potatoe disease is from using *too much manure and planting too long a time the same sort or kinds*, without often enough resorting to the seed for newer and different kinds.

The kind of potatoe I have raised, by sowing the seed eight years ago, which I call "*Bowie-Seedling*," have now arrived at hardy perfection, and become nearly akin to the Mercer, from the seed of which it was raised. But it is becoming now for the *first* time, subject to the disease. For the first few years it was very imperfect, being of various forms, and of different color, and small, but free of disease, until this year. This year, slightly affected, but not near so much so as other kinds on my own farm and on my neighbors. Like every other object in the vegetable, and indeed I might say also animal kingdom, it having reached a certain stage of perfection, can be carried no farther in improvement, and must deteriorate. It must be crossed, or aided by some change, or it will in a few years deteriorate into utter worthlessness. Breed animals in and in, and they will become good for nothing. It is true, that by skill, care and proper means, flowers and fruits, and vegetables, become, from useless, trifling eye-sores and unwholesome non-descripts, large, luscious, and beautiful; but there is a stopping point: the peach will never become as large as an eighty pound pumkin, and I venture to say, there never will be seen a grass-green horse. It has been said "thus far shalt thou go and no farther." While the Supreme Being has placed a limit to human means, I cannot believe that he has prepared an article of human subsistence, which is so necessary for the support of millions, and will permit it to become totally useless, and as some seem to fear, will in a short time eradicate it from the earth.

The potatoes I raised from the seed, are free from disease, in comparison with other kinds, but will become diseased I have no doubt in a few years. Quere—would not seed now from them, be productive of a potatoe free from rot?

Too free use of manure is hurtful. Animal and vegetable manures are particularly productive of weeds, worms, flies, and stimulate the vines to great and rapid growth, whereby, from all these causes combined, smut, mildew, and other diseases are generated. The first year the crop may be slightly affected—the next year it becomes more so—and thus members of the same diseased family are again planted to become still more impregnated with the distemper, by the same appliances which first caused it, and thus, fuel is added to the fire year after year, until they become so diseased, that the farmer is compelled to "change his seed."

It is a well known fact, that until a few years before the appearance of this potatoe rot, but little attention was paid to the raising and using of great quantities of manure. And those who first used manure extensively, used it upon their root crops; from seeing a great increase in these by its lavish use, they were led to use it in quantity upon other crops. Again, the potatoe disease commenced in Europe first, where heavy manuring of them with unrotted manure, had been long practised, and so in this country. It began first in the north, with those farmers who had first caught the flame of improvement

in agriculture, by means of manure, which the immortal Buel had lit up in a land where the people were more easily persuaded to look well to their own interests, than our people are, who had been already for years enlightened by the "American Farmer," though they but seldom practised its precepts. Of late years, our people have manured heavily, and lo! the rot affects our potatoes, for we bought "Mercers" from the north, and practised northern cultivation with them.

Another fact—all scientific writers propose the use of plaster, lime, salt and other mineral manures; but there they stop—it not occurring to them that unfermented, or other vegetable and animal manures are hurtful. They say, that where plaster, salt, or lime, &c. have been used, the potatoes are less, and in some cases not at all diseased. They then account for it by going into the effects of these substances upon the air, the dews and a thousand other chimerical causes, but all conclude at last that nothing can be arrived at with certainty. Now for my other facts;—I had last year several rows of potatoes, (Mercer) manured with tobacco stalks alone; there was hardly one diseased potatoe,—the rest were alongside manured with well rotted stable and hog pen manure, many of the potatoes were rotten, others unsound. Now it is well known that there is a great deal of nitre in the tobacco stalk, and the vegetable parts are so woody, that they did not fully decay while the potatoe was maturing, consequently the only benefit the potatoe derived was from the nitre in the stalk.

I sold to a neighbour some from my seed-heap. He planted them in April, upon a dry, sandy or gravelly soil, that was poor, but no manure but a light sprinkle of ashes unslacked, over them. He had splendid, sound potatoes, and they were from time of planting, in eight weeks, as large as hen eggs, with, as he says, not one diseased.

In 1845 I raised some of the soundest and finest potatoes in my neighbourhood. My neighbours bought this spring most of them for seed, although some were touched by the rot, I made about 160 bushels, and I lost of them 8 or 10 bushels. Half of these potatoes were manured in the drill with stable manure, and other drills with tobacco stalks, while some had nothing but a good sprinkle of plaster. Where the plaster was, none were rotted, were the fewest but largest; those least injured by rot were where the tobacco stalks were; and where a heavy coat of manure was placed, there was a large crop, but much disease.

One of our most successful potatoe growers, and excellent managers, Mr. B. D. M. never had the rot in his potatoes, until he had used the same seed, or his own kind, for many years, and had resorted to heavy manuring, with long manure, and other barn yard and stable manure. Then he, as was formerly his practice, selected his poor knolls and barren spots for his potatoes, and used no other manure than tobacco stalks; he made great crops, and the most splendid, mealy, delicious potatoes,—outselling every body; and he made large crops. One year from seven pecks planting, he gathered 170 bushels of fine potatoes. This is a strong fact.

The soundest and best potatoes raised in our county, are made upon our poorest lands. In what we call "Chinquepin Hundred," we hear but little or no talk of "the rot;" but while they boast not of large crops per acre, they always can give you fine, large, sound potatoes to eat. And they do not use much manure. This is another strong circumstance.

An old writer, as far back as 1785, when no rot was heard of, says, "to make good potatoes, take old worn out stubble land and plow it up in the fall, in two furrows back to back, so as to leave drains about two feet apart, by this means it becomes thoroughly dry." * * * "When you plant, put a piece of dung as big as your fist upon each potatoe set, and let them be the length of a man's foot apart in the drill." This you see is not heavy manuring.

From all these facts and circumstances, I have come to the following conclusions, without, I candidly confess, being able to assign a scientific reason why it is so, and why it should be so; but I know it is so, and seeing and feeling make us have faith, although we may not be able to explain the mysteries of that we feel to be true.

1st. Conclusion—We do not often enough, with sufficient care, propagate new species of potatoes from the seed.

2ndly. We use too extensively vegetable and animal manure upon our potatoe crop, especially upon our rich lands.

3rdly. We should be careful to select dry ground for this crop. Not high, hilly land, but dry soil, one which retains not water long, but is deep and dry, because the water can easily penetrate it below the roots, and pass off without injury to them.

If I am right in my conclusion, the remedy for the disease I would suggest is, to wit:

1st. Let every farmer select a few fine potatoes free of rot, and plant them in only thin soil, without any manure, and save the seed; from this, let him propagate a new variety for himself, saving and planting from the product of this seed the handsomest and best specimens annually, for four or five

years. If at that time his production should not be valuable, it will not have been without profit to him, for his example will have urged others to a like course, and from the many efforts, he will no doubt derive great benefit, as some one or other will have succeeded in procuring a superior kind of potatoe.

2nd. The land intended for potatoes next year, to be broken up this winter and subsoiled. The poorest land to be selected, and given, say not more than twenty loads of manure per acre, spread over and ploughed in this winter. If the land be of good quality, no manure at all. Next spring when you plant potatoes, be sure to put no manure, except this mixture, sowed over the potatoe sets, so as to make the bottom of the trench look white. Mixture—one bushel of lime, one of salt, one of unleached asches, half a bushel of saltpetre, half a bushel of soot, or charcoal. Let them have no other manure, except when they come up above ground, give them a good dressing of plaster, sowed just over the top of the drill. The potatoes used should be sound, and small ones selected, as they are commonly most freed from disease.

I do not contend that by this course more potatoes can be raised, but I believe that by such a course, the rot will be cured, and many new and superior kinds of this excellent vegetable be the result.

These suggestions and deductions of my own, drawn from facts coming under my own observation, I offer with great diffidence, as they are at variance with the most learned of the writers upon this important subject. I should never have advanced them, perhaps in public, had I not been called upon by your letter, for my views in relation to the matter. I now give them to you for what they are worth—and have the pleasure to be

Your friend,

Walter W. W. Bowie.

For the Farmers' Cabinet.

Extension of Colman's Tour.

I am a subscriber to Colman's Agricultural Report, and have been much interested in the Numbers as they have appeared. I know of few books of travels through Great Britain, which contain so much interesting and valuable information; and as the work draws towards a conclusion, I feel great regret, that while much remains untold about the agriculture of our Father-land—all the interesting and important details concerning the Continent of Europe, will have to be crowded into two Numbers. If the subscribers to the Tour, think with myself on the subject, there would be a general expression of regret on this account, and an effort made to induce the author to extend his Report to three volumes. The present might then be occupied with the conclusion of the Report on England, and the third volume devoted to the Agriculture of the Continent. The price of the additional volumes, I am sure, would be cheerfully paid by a majority of the subscribers, who would thus receive, instead of a compendium of information, so brief as to be of little practical value, a full and detailed report, perhaps more interesting, because more new to us, of all that is most worth knowing, respecting some of the richest and best cultivated countries on the globe.

D. B. S.

We freely endorse the suggestion made above, and would be much gratified, if it could be so responded to by the subscribers to the *Tour*, as to determine our *Tourist* to give more time on the Continent, and more detailed information in relation to its Agriculture, than we fear he can give in the two remaining Numbers. We know comparatively but little of that agriculture, yet we are aware that there is much which it is important we should know;—and who can more thoroughly or more pleasantly inform us, than our good friend Colman?—Ed.

Planting the Isabella Grape Vine.

The most favorable season for planting the Isabella grape-vine in the United States, is when the red-flowered maple is in bloom, which usually occurs in Georgia, from the 20th to the last of February, and five or six weeks later near Philadelphia and New York. In selecting the cuttings for a vineyard, they should be of one variety, and taken from the most fruitful part of the vine. Let us not content ourselves with single clusters, but those which are the most prolific. The greatest proportion of fruit grows from the buds on the last year's shoots next to the old wood, with the exception of the nearest eye, the top buds being unfruitful and seldom bearing at all. Some prefer to plant cuttings containing a considerable portion of the old wood; but, as it is not always prudent nor economical to mutilate a favorite vine too much, it is best to select fruitful cuttings of the last year's growth, with the wood well ripened. They should be of a moderate size, short-jointed, and containing from six to eight eyes or buds in each. They should be cut off transversely from the vine, with a sharp knife, close to the old wood, and not less than two inches of blank wood should be left for the protection of the terminal buds. The ends of the cuttings that are to remain above ground should be cut in an oblique direction, and the sloping side should be opposite the side containing the uppermost bud. If possible, they should be planted in calm weather, immediately after separation from

the parent vine, and be obtained from a soil, situation, and climate, similar to those in which they are intended to grow; but if any difference in these respects should unavoidably occur, it will be better to transplant from a poorer to a richer, and from a dryer to a moister soil, as also from a colder to a warmer climate. But should it be necessary to convey the cuttings from a distance, their lower ends should be immersed in a composition of fine earth, well mixed with linseed or other oil, of about the consistence of tar, as soon as they are cut off from the parent stock, at the same time, taking the precaution not to cut off the top ends till the moment they are to be used.

If the situation of the ground be on a plain, or in a valley, it should be dug two feet in depth, and on rising ground three; but on a hill-side, somewhat steeper, it should be turned up at least four feet, in order that the roots may penetrate beyond the reach of drought. If the cuttings are intended to be planted in drills or rows, let there be formed trenches three feet in length, two feet in depth, and the width of a spade, leaving intervals or baulks, a yard in length, between the trenches till the row is finished. Then, with good virgin soil, if it be at hand, if not let it be procured from the woods, and fill up the trenches therewith, mixing it at the same time with a due proportion of leaf mould or well rotted manure, or what is still better, the leaves and husks of vines, or grape seeds, in order to quicken and strengthen the growth of the plants. If a vineyard be the object which we have in view, let the rows or drills be trenched from five to ten feet asunder, according to the surface of the ground and the latitude of the place. If the situation be on a plain, in a high degree of latitude, the rows should be eight or ten feet apart; but if it be on the side of a very steep hill, or in a low degree of latitude, five feet will be sufficient; and on moderately inclined surfaces, or in higher latitudes six or eight feet apart will be all that is required. With regard to the direction of the rows, and the height to which the vines should be trained, they may run in a manner that will allow them to face any point of the horizon between south and east; and they may be supported on props, or trellises from six to ten feet in height, and even more, according to the vigor of the vines. But in cities, or about houses in the country, single vines may be trained on the sides and ends of buildings, along the sides of fences, or the trunks and branches of trees.

The ground having been prepared in the manner before described, the cuttings are next to be planted in the centres of the trenches, so that each terminal bud will be even with the surface, and directed towards the south. Then the earth must be firmly pressed round each plant, and should it subsequently settle and leave more than one bud above ground, more earth or mould must be added to bury them up. As soon as the season becomes hot and dry, it will be necessary to protect the cuttings from the mid-day sun, by means of matting or other materials, which should be removed towards evening, and allow them to remain uncovered until the next morning, at about the time of the disappearance of the dew. Strict attention must now be observed in keeping the soil around the cuttings continually moist, and should not this be effected by natural means, it must be done by sprinkling rain or river water over them, or what is still better, soap-suds, or other stimulating fluids, especially prepared for the purpose, but not too strong. Soon after the cuttings begin to take root, which may be known by the swelling of the buds above the surface, young shoots will gradually protrude, and the plants will require but little attention during the remainder of the season, except an occasional hoeing to destroy the weeds, and to loosen the soil in order to admit the air and moisture, about the roots. Should the season prove dry, however, and the earth around the plants become parched, it will be necessary to irrigate them frequently with rain or river water, or with prepared liquids as suggested above. Early in autumn, rub off all the buds from each plant, except two, which are to be reserved for training the ensuing year.—*American Agriculturist.*

For the Farmers' Cabinet.

Composition for Peach Trees.

Mr. Editor,—Some time since, on visiting Mr. Cushing of Watertown, near Boston, I was struck with the vigour and freshness of foliage of his peach trees—some of which before the use of the following receipt, he was about to cut down, thinking them good for nothing, viz:

One-third soot; one-third lime; one-third sulphur—mixed with water to the consistency of paint—to be laid on all the tree, before the buds appear.

I am not quite sure that the same will answer for plum and other fruit trees, but as the season is at hand for using it, I propose trying it. Respectfully, &c.

Robert Ralston.

Mount Peace, March 10, 1847.

Would you avoid one great cause of ill humor in your neighbor? Keep your fences in good order.

Pennsylvania Farming

Recommended to be practiced in Maryland, naturally a better wheat country.

The following letter was written by a plain, practical, working farmer, giving his views in plain terms—as one neighbour does to another—without any view of appearing in print. It need not be read with the less attention or profit on that account. We are sorry to understand that farming is not improving as generally as might be wished, in a region so blessed by nature with a rich and enduring soil and pure healthy atmosphere. If she does not keep pace with other sections, *query*, is it that her inhabitants despise book-knowledge; or is it, as some would contend, that they *read too much* of what is going on in the wide world of agriculture? On reading, we solicited the favour of being allowed to publish it. If there be in it nothing absolutely new, there is that which cannot well be too often repeated.—*Editor Farmers' Library.*

Utica, January 29th, 1847.

Dear Sir,—In my last letter I mentioned something relative to the improvement of land in Lancaster county. I am fully convinced that, if a proper and judicious mode of improving land was introduced into *Frederick county*, that in the course of six or eight years it would produce double what it does at this time. I consider that part of this county, where I am acquainted, a *much better wheat land than that of Lancaster county*, and under similar cultivation would bring *more wheat to the acre.* I would not dare to say that every farm would bring double. No doubt there are many good farmers here, as well as there; yet, I must say, I have been unfortunate in not meeting with many of that kind.

The most of all the farms within my knowledge, both in the limestone, as well as the red-lands, have become deteriorated and inert from the circumstance of a wrong mode of farming. A uniform mode of shallow ploughing, say five to seven inches deep—and that almost continually under the plough—with now and then a little starved crop of clover, and often the cattle turned on before it is six inches high: is it any wonder that these complaints are heard about bad crops? Nothing is a more convincing proof to me that plants derive a great deal of their nourishment from the air, seeing the crops, and considering the manner of cultivation. All land that has a good subsoil and what is generally called loam, is susceptible of improvement; and the only time it can be made available is late in the fall, after the subsoil has become saturated with the fall rains, the wetter the better. There ought, by all means, to be a heavy coat of something to turn down. The ploughing must be a foot deep. Three inches or four of the subsoil which lies under seven inches, if well applied, would soon pay the State debt. What a pity to have so much hidden treasure unemployed and unproductive! When the genial rays of the sun spread a benign influence around in the spring season, causing man and beast and bird to rejoice, vegetation also rears its head to praise its Maker. This is the time also to prepare food, first for plants, and afterward for man and beast. Fermentation and decomposition then take place.

I would now say something about the deep ploughing: A considerable quantity of the five inches of subsoil turned up last fall, and frozen last winter, will now become available for the food of plants: amelioration takes place, it becomes friable and moulders down, becomes commingled with the top soil, undergoes now a state of fermentation—a kind of chemical process; and here is also going on, at the same time, the decomposition of the vegetable matter turned under in the fall. Here is a fine range for the corn roots to seek their supply—instead of six or seven inches, here are twelve. Here is a place to hide the roots from the sun, and here is a little cistern to hold water when there is a little to spare, to be drawn up by the rays of the sun when wanted.

As we have got through with the fresh start for improving the land—especially if it is possible, before planting the corn, to put a little manure on, as also fifty bushels of lime to the acre—this would be doing the thing right—we will now leave you with this advice: Work the corn well early; be sure to have no work to do in it after it becomes a foot high. The next crop to be put in is wheat, the next summer. Commence ploughing in May, harrow in June, plough in July, harrow in August, plough the third and last time the first week in September, and sow about the middle of the month. As soon as you have finished harrowing the wheat, sow to each acre eight quarts of timothy seed; then on with your roller, and roll all down smooth.

Then in the spring, to every six acres, one bushel of clover seed. The next summer there must be *no stock put on before the first of July*, and be sure none the fall before except a few hogs, if they do not root, after the wheat is off. The next summer mow the first crop about the first of July; and let the second crop stand, to be turned under as before, a foot deep. Now you have

got one once through. This plan may be altered and changed to suit circumstances, as may be required. If wished, it may be put in *rye* after the wheat; or it might remain three years in grass. The field might be put in wheat the same fall, by cutting off the corn, but the grass will never succeed so well, and therefore I would never advise that plan. It is *large crops of grass* that will improve the land cheaper and faster than any other mode of improvement.

As I have spun out a pretty long yarn already, I will soon come to a close, after saying something about the subsoil and deep ploughing. If the land is light and dry, and the subsoil land is open and porous, pervious to water, with a large proportion of sand, such land might be ploughed a foot deep in the spring for corn. The fall, however, is the proper time for all subsoil ploughing, and no other time will answer for land when the subsoil is of a hard, stiff clay. The frost is the only and proper agent to commence the work of deepening the soil.

I really feel as if the boy was making an attempt to instruct the master. Well, if it should be so, I know you will attribute my saying what I have said to a pure intention.

To conclude the whole matter, a deep rich soil is indispensable, if you want good crops. Now, the great point is, let every farmer go to work. Let him not only work, but *read* and *study;* and the man that shall find out the most judicious plan of deepening and improving the soil, let him have a great monument raised to his memory. I am sure he would be more deserving *than if he had killed a thousand Mexicans.*

Respectfully,

Wm. Todd.

White and Brown Bread.

Several years ago, we threw out the surmise that the separation of the white from the brown parts of wheat grain, was likely to be baneful to health. We proceeded upon theoretical grounds, believing that Providence must have contemplated our using the entire grain, and not a portion only; selected by means of a nicely arranged machinery. It struck us forcibly that to go on for a long course of years, thus using a kind of food different from what nature designed, could not fail to be attended with bad consequences. We have since learned that our views have some recognized support in science. The following paragraph from a recent pamphlet will at once serve to keep the subject alive in the minds of our readers, and explain the actual grounds on which the separation of flour is detrimental. "The general belief," says the writer, "is that bread made with the finest flour is the best, and that whiteness is the proof of its quality; but both these opinions are popular errors. The whiteness may be, and generally is communicated by alum, to the injury of the consumer, and it is known by men of science that the bread of unrefined flour will sustain life, while that made with the refined will not. Keep a man on brown bread and water, and he will live and enjoy good health; give him white bread and water only, and he will sicken and die. The meal of which the first is made contains all the ingredients necessary to the composition of nourishment to the various structures composing our bodies. Some of these ingredients are removed by the miller in his efforts to please the public; so that fine flour, instead of being better than meal, is the least nourishing; and to make the case worse, it is also the most difficult of digestion. The loss is, therefore, in all respects a waste; and it seems desirable that the admirers of white bread, but especially the poor, should be acquainted with these truths, and brought to inquire whether they do not purchase at too dear a rate, the privilege of indulging in the use of it. The unwise preference given so universally to white bread, leads to the pernicious practice of mixing alum with the flour, and this again to all sorts of adulterations and impositions; for it enabled bakers, who were so disposed, by adding more and more alum, to make bread made from the flour of an inferior grain look like the best or more costly, and to dispose of it accordingly; at once defrauding the purchaser and tampering with his health. Among the matters removed by the miller are the large saline substances, which are indispensable to the growth of the bones and teeth, and are required, although in a less degree, for daily repair. Brown bread should therefore be given to nurses and to the young or the growing, and should be preferred by all, of whatever age, whose bones show a tendency to bend, or who have weak teeth. It is believed that brown bread will generally be found the best by all persons having sluggish bowels and stomachs, equal to the digestion of the bran. But with some it will disagree; for it is too exciting to irritable bowels, and is dissolved with difficulty in some stomachs. When this happens, the bran should be removed either wholly or in part; and by such means the bread may be adapted, with the greatest ease, to all habits and all constitutions."

Mr. Smith, in his late remarkable work on fruits and farinacea as the food of man,

gives some illustrations of this doctrine. "Bulk," he says, "is nearly as necessary to the articles of diet as the nutrient principle. They should be so managed that one should be in proportion to the other. Too highly nutritive is probably as fatal to the prolongation of life and health, as that which contains an insufficient quantity of nourishment." It is a matter of common remark among old whalemen, that, during long voyages, the coarser their bread, the better their health. "I have followed the seas for thirty-five years," said an intelligent sea-captain to Mr. Graham, "and I have been in almost every part of the globe; I have always found that the coarsest pilot-bread, which contains a considerable portion of bran, is decidedly the best for my men." "I am convinced, from my own experience," says another captain, "that bread made of the unbolted wheat meal is far more wholesome than that made from the best superfine flour, the latter always tending to produce constipation." Capt. Dexter, of the ship Isis, belonging to Providence, arrived from China in December, 1804. He had been about one hundred and ninety days on the passage. The sea-bread, which constituted the principal article of food for his men, was made of the best superfine flour. He had not been long at sea before his men began to complain of languor, loss of appetite, and debility. These difficulties continued to increase the whole voyage; and several of the hands died on the passage of debility and inanition. The ship was obliged to come to anchor thirty miles below Providence; and such was the debility of the men on board, that they were not able to get the ship under weigh again, and the owners were under the necessity of sending men down from Providence. When she arrived the owners asked Capt. Dexter what was the cause of the sickness of his men? He replied, "The bread was too good."—*Chambers' Edinburg Journal.*

Farmers' Daughters.

It is often remarked with some surprise, that farmers' daughters seldom prefer husbands of that profession; and many farmers believe that educating girls, produces a disrelish for rural life. Others have thought the blame was with mothers, in not confining them to business sufficiently to make it agreeable to them, or that they had neglected to impress them with the idea, that farmers were the only men suitable for husbands. In my humble opinion, if they would look to themselves for the cause, they would be quite sure of finding it.

It is not education we have reason to fear, but the want of it. The thoroughly educated woman understands her duties and responsibilities better, and is far better qualified to discharge them than she otherwise could be; neither do I believe want of employment to be any part of the reason.

Our girls hear much said of the safety of the agricultural profession—of the almost sure independence of the farmer; but have they ever seen, or ever heard of independence for the farmer's wife? Do they not see that for her there is no cessation from toil—that, as their father's lands increase, so do their mother's cares?

They hear that their father has worked *hard* long enough, and intends to relax from labour, and only oversee his business, without hearing it even hinted that their mother could live more comfortably. Though they see their father employ extra help when his work becomes troublesome—which makes the mother's task still harder—they see no indication of her toil being appreciated as long as she can endure it; and if help *must* be employed, it is not that she may live *easier*, but because she can not do what must be done.

And when the farmer finally determines to take his ease, and sells or rents his farm, he prudently suggests to his wife the necessity—as he has given up business—of her managing in such a manner as not to depend on him for funds; perhaps proposes to keep an extra cow, a few sheep, or something of the kind, to enable her to supply herself with necessaries. Who ever heard of a farmer's wife being able to live without work, while she had the use of her feet and hands?

There is no class of women of whom so great an amount of care and labour is required as among farmers, nor where the dependence of wives is more thorough.—*Genesee Farmer.*

An Extra Cow.—Dea. Quartus Smith, of Sunderland, has a cow ten years old, which on the 5th of December last, weighed 1,520 lbs. She came in on the 31st of January, and on the third day thereafter, she gave in twenty-four hours forty-eight pounds and three ounces of milk, from which were made three pounds and two ounces of butter of the first quality, a specimen of which has been sent us, and appears equal in every respect to the best made in the spring. She has since given fifty-one pounds of milk in twenty-four hours.—*Amherst Express.*

The Greedy Mole.

The extreme voracity of the mole is well known. The shrew, which belongs to the same natural group as the mole—the insectivorous *carnivora*—would seem to resemble it in this peculiarity, according to a statement furnished to me by my esteemed friend Mr. Selby, of Twizell. He observes, in a letter received February, 1843, "What greedy gluttonous animals the shrews appear to be! One was caught alive, upon the snow, here, the other day, and brought into the house and placed in a glass box. A piece of raw mutton was given to it, which it attacked with the greatest voracity, the moment it smelt it, and continued eating almost without intermission, till it had devoured the whole of it. The piece, I should think, could not have weighed less than half or three-quarters of an ounce. When the shrew first seized it, it shook it as a dog does a rat, and then began to gnaw it with its sharpened grinders on one side of the mouth. It lived for a couple of days, almost continually eating; and previous to its death, which was very sudden, seemed in perfect health."—*Jenyn's Observations in Natural History.*

Gypsum.—How does gypsum act? This is an inquiry which has often been made, and which is answered in various ways, even by the learned. True science can alone rationally direct the practical farmer. "All else," observes an erudite author, "is mere experiment—hazardous, expensive and conjectural." The beneficial effects of gypsum, or plaster of Paris, on growing crops, is to be referred exclusively to the power it possesses of fixing ammonia, and holding it for the gradual use or progressive appropriation of plants. It has been correctly demonstrated by the most careful and accurate scientific experiments, that one hundred pounds of gypsum will fix as much ammonia in the soil, as *six thousand two hundred and fifty pounds* of horses' excrement would impart to it. Ammonia is always present in the atmosphere, and hence the beneficial effects of this mineral, which absorbs and fixes it so as to render it available to the growing crop.—*Maine Farmer.*

Warts on the udder and teats of cows may be easily removed, simply by washing them in a solution of alum and water. We have known this application to result favorably even after all other prescriptions had failed, and the disease seemed to have advanced beyond the possibility of cure. Try it.

THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

Philadelphia, Third Month, 1847.

It will be observed by a communication from James Gowen, on page 243, that he is making arrangements for the opening of an Agricultural College at Mount Airy, Germantown, about eight miles from Philadelphia.

An establishment of this character, in this vicinity, has been a subject of conversation among many of our intelligent citizens for years past, and numerous evidences have been furnished from agriculturists and others, at a distance—particularly in the Southern States, that many advantages were anticipated from the realization of such a scheme.

The location—in itself an important consideration—is every thing that could be desired. The readers of the Cabinet need not be informed of the capital—the industry—the enterprise, and sound judgment, which James Gowen has brought to bear upon his farming operations, nor of the successful results which have crowned his efforts. In the Cabinet of the sixth month of last year, under the Editorial head, will be found some remarks which are not foreign to the subject, though the plan now in contemplation, had then barely been suggested.

This is a matter of no ordinary importance to the agricultural community, independent of the results of the enterprise as it may affect our friend. It is an arduous undertaking, and must involve considerable risk of capital, as well as bodily and mental exertion. Most men would shrink from it, and perhaps but few incur the responsibility. James Gowen is prepared and willing to meet it in its various aspects. Our hope is that the public will appreciate the effort, and meet him in a generous spirit: that not only his individual interests will be promoted, but that also those of our common country will be so benefitted, that he shall be enabled to feel in after life that he has not lived in vain.

Our brethren of the Agricultural press throughout the country, as well as other papers, are respectfully requested to copy the circular on page 243, andthus serve our common cause.

A spirited and enterprising friend of ours, a farmer of "little Delaware," informed us a few days ago that he was preparing to plant 120 acres of Indian corn this spring, and that he had just purchased seventeen tons of guano at a cost of about $600, which he should apply to the ground.

A friend—J. Y., of Towsen Town, Md.,—makes the enquiry, if any of our "readers have been successful in destroying *Couch-grass*, that greatest of all pests." We apprehend there is no better mode of destroying this pest, than by thorough ploughing. He also asks for information from those who have practised *soiling:* their method, and the results. We would be glad to receive communications on these matters.

☞ It is an unpleasant task to be obliged to put our friends upon their guard in relation to a young man of respectable appearance, who has been active in endeavouring to procure subscribers and collect bills due for the *Farmers' Cabinet*. Two receipts have been shown us, signed S. P. Colman, both given to persons in the vicinity of Camden, N. J., and both dated "Dec. 24th, 1846." The Editor knows no such person, and has given no authority to any such person to act for him in the premises. He feels at a loss for words to characterise such evidence of meanness and dishonesty. *Swindling* is a wretched business for a young man to begin the world with.

Our friends are particularly requested to be careful in this matter, and to pay money on our account to no one, unless they are satisfied he is authorised to receive it. Those to whom it is inconvenient to call at the office, either as new subscribers, or for the payment of bills, can readily remit by mail. It is fair, we think, that they should pay the postage; if they think otherwise, the editor will do it.

It is probably not much more than a rough guess, but we have seen it stated, that the surplus of corn in the State of New Jersey is worth $1,500,000.

The quantity of rain which fell in the 2nd month, 1847, was a little more than four inches and a half.

4.57 in.

Penn. Hospital, 3rd mo. 1st.

☞ SHORT ADVERTISEMENTS,

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line. Payment in advance.

Fruit & Ornamental Trees.

The subscriber offers for sale an extensive assortment of Fruit & Ornamental Trees of the most approved varieties, of fine size and warranted true to their respective names. Orders may be left with J. Tatum, No. 50, N. Fourth street, where catalogues may be obtained or E. P. Middleton, No. 9 Market st.

EZRA STOKES,

Mt. Laurel, near Moorestown, Burlington co., N. J.

Second month 15th, 1847.

SEED STORE,

No. 23 Market Street, Philadelphia.

The subscriber keeps constantly a supply of White and Red Clover, and other grass seeds; fresh Perennial Rye-grass, and Lucerne seed. Field seeds, consisting of choice Spring Wheat, Barley, Potatoe Oats, Northern and other seed-corn. Also, in season, Fruit and Shade Trees. Garden and Bird seeds generally. Guano in parcels to suit purchasers.

M. S. POWELL.

Philad., Feb., 1847. tf.

A FARM FOR SALE.

A farm in Gloucester county, N. J., containing about 175 acres of upland and meadow, and some young timber, is offered at private sale. The soil is well adapted to the growing of wheat or grass, and a large proportion of it is in a high state of cultivation. There are on the premises a large stone house and kitchen—a large stone barn, with other out buildings, and also a young apple orchard just come into bearing. It is about ten miles from Camden,—four from Woodbury, and a short mile from the river Delaware. On the South and North, respectively, it is bounded by *Great* and *Little* Mantua creeks; and the Paulsborough road from Camden, runs through it. A steam-boat to and from Philadelphia, ran daily up the creek last summer, stopping at a landing on the premises; and the same convenience will probably be continued hereafter.

This farm is well worthy the attention of a man who would make an investment in property of this character.

Enquiry may be made of Joseph Whitall, N. E. cor. of Buttonwood and Marshall streets, Philadelphia,—of Benjamin Whitall, near Woodbury,—of David Whitall, on the premises, or of the Editor, at this office.

Third mo. 15th, 1847.

HOUSE AND LOT FOR SALE.

The subscriber offers at Private Sale, a lot of half an acre of ground, on which are a two story brick dwelling and kitchen, barn and other out buildings. It is pleasantly situated at Marlton, in Burlington County, New Jersey, about eleven miles from Camden, and five from Medford.

Enquiry may be made of EZRA EVANS, or CHARLES STOKES, in the neighborhood, or of

JOSHUA WHITALL,

147 Coates Street, below Fourth, Philadelphia.

Third mo. 15, 1847.

R. SINCLAIR & CO.

Plough and Agricultural Machine

MANUFACTURERS & SEEDSMEN,

BALTIMORE:

Have for sale the Maryland Self-Sharpening Plough, several sizes, warranted the most durable and simple Sub-soil Plough in this country; also Corn and Cob Crushers, Cylindrical Straw and Corn-stalk Cutters, Burr Stone Mills, Corn Shellers, for hand and horse power, Horse Powers and Threshing Machines, Fanning Mills, with a numerous assortment of Ploughs, Drill Machines, Harrows, Farming and Garden Tools, Seeds, &c.

☞ See Catalogues for particulars, to be had of us gratis.

Balt. March 15, 1847.—2 times.

WANTED, 50,000 Apple, and 20,000 Pear trees, one to three years old. Apply to J. Moulson, Eighth and Chesnut streets, Philadelphia, or by mail, *post paid*.

March 15th.

Valuable Farm at Private Sale.

THE subscriber offers for sale the valuable FARM on which he has resided for a number of years past, situated in East Bradford Township, one mile west of the flourishing Borough of West Chester. It comprises about 60 acres of naturally fertile and well improved land, under good fence, and well watered. The buildings are of stone, large, and in good repair. The mansion is pleasantly situated, possesses many conveniencies, and is of modern finish, 44 feet front by 32 feet deep, with an eight feet entry, two rooms on each side, besides kitchen and wash-house, and six rooms in the second story. Pure water is introduced into the house and barn-yard by means of a force pump and water wheel propelled by a never failing stream.

The grounds are planted with fruit, ornamental trees and shrubbery, with a good orchard in full bearing. There are also a three-story barn, 40 feet by 56 feet, a carriage-house, work-shop, ice-house, wood-house, and an excellent and convenient milk-house.

This property is eligibly situated on the main road from West Chester to Lancaster, in an unexceptionable neighbourhood, and offers considerable inducements to one wishing to retire from active business or to engage in agriculture on a moderate scale.

Apply to the subscriber, residing thereon, or to John Lippincott, No. 65 Marshal street, Philadelphia.

CHARLES LIPPINCOTT,
2t. West Chester, Chester county, Pa.

Agency for the Purchase & Sale of

IMPROVED BREEDS OF CATTLE & SHEEP.

THE subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, swine, poultry, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay.

AARON CLEMENT.

Sept. 15th, 1846.

FOR SALE,

AT D. O. PROUTY'S

AGRICULTURAL WAREHOUSE,

No. 194½ *Market Street, Philadelphia,*

Corn-Shellers in great variety, price from $1 50 to $50 each; Hovey's Patent Hay, Straw, and Corn-stalk Cutters; Grant's Patent Fan Mills, for chaffing and screening wheat at one operation, warranted to take out cockle, cheat and smut. Also good Fans, for $14 to $18 each.

Whitman's Horse-powers and Threshing Machines, with Straw Carriers and Fan Mills attached; Spain's Improved Barrel Churns, the dashers of which may be taken out to clean. Cheese-presses, &c.; Centre-Draught, Self-sharpening, Right & Left-hand Ploughs, warranted to give satisfaction in their operation.

September 15th—tf.

COATES' SEED STORE,

No. 49 *Market Street,*

FRESH TIMOTHY SEED,

Of various qualities, from good common seed to the purest and finest that can be produced,

TOGETHER WITH A COMPLETE ASSORTMENT OF

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties,—Bird Seeds, &c.

JOS. P. H. COATES.
Successor to George M. Coates.

Sept. 15th, 1846.

PHILADELPHIA

AGRICULTURAL WAREHOUSE,

No. 291 *Market Street, North side, between Seventh and Eighth Streets, Philadelphia.*

The subscriber has just received from Worcester, Massachusetts, an assortment of Ruggles, Nourse and Mason's improved Eagle, Subsoil and other Ploughs, which have been so much approved by the principal Agricultural Societies in New England the several last years; also Bennett's Cultivators and Stevens' Self-Feeding Hay and Straw Cutter, a late and very valuable improvement in that kind of implement; Grain Cradles, &c.; an assortment of Ruggles, Nourse and Mason's Self-Sharpening Ploughs of the form and model of those above named, are daily expected. T. F. has and will constantly keep a large assortment of Farming Implements, as Fan Mills, Straw and Hay Cutters, Corn Shellers, Grain Cradles, Scythes, &c., together with Garden Tools of all kinds.

THOMAS FURBER.

May 15th, 1846. 1 yr.

NEW

Horticultural and Agricultural Ware-house,

84 *Chesnut Street below Third, South side.*

The subscriber has for the better accommodation of his customers, opened the above ware-house, with a large stock of Garden and Field Seeds, crop of 1845. Implements and Books on Gardening and Farming; he calls the particular attention of farmers to his pure stock of Sweede Turnips, Field Carrots, Beets and Parsnips, Pruning Shears, Saws and Knives.

March 14th, 1846.—1y. R. BUIST.

COAL.

THE subscriber has made an arrangement for a constant supply of superior Lehigh and Schuylkill Coal—carefully prepared for family use, which he will furnish *at the usual cash prices*, on application at the office of the Farmers' Cabinet, where samples of the different kinds and sizes may be seen.

JOSIAH TATUM.

Philadelphia, Third month 15th, 1847

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$3 50
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	50
Complete sets of the FARMERS' CABINET, half-bound, 10 vols.	8 50
DOWNING'S Landscape Gardening,	3 50
Downing's Fruits and Fruit Trees of America,	1 50
SKINNER'S Every Man his own Farrier,	50
AMERICAN Poulterer's Companion,	1 25
BOUSSINGAULT'S RURAL ECONOMY,	1 50
FARMERS' & EMIGRANTS' HAND-BOOK,	1 00
MORRELL'S AMERICAN SHEPHERD,	1 00
STABLE ECONOMY,	1 00
BEVAN on the HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
THOMAS' FRUIT CULTURIST,	50
SKINNER'S CATTLE & SHEEP DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
HOARE ON THE VINE,	62½
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions received for Colman's Agricultural Tour—or single numbers sold.

☞ We are prepared to bind books to order.

GUANO.

Twenty-five tons first quality Ichaboe Guano, in bags or barrels, for sale in lots to suit purchasers, by

S. & J. J. ALLEN & CO.,
No. 7 South Wharves, 2nd Oil Store below Market street, Philadelphia.

October 15th, 1845. tf.

Poudrette.

A valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the Farmers' Cabinet, No. 50, North Fourth Street, or at the manufactory, near the Penitentiary on Coates' street. Price, until 1st of next month, for seven barrels or more, $1 87½ per barrel, containing 4 bush. each. Any number of barrels less than seven, $2 each, or 37½ cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. The results on corn and wheat have been generally very satisfactory. Farmers to the south and in the interior, both of this State and of New Jersey, are invited to try it. We are now able to supply the demand for corn.

JOSIAH TATUM.

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Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For seven dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the 11th volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

By the decision of the Post Master General, the "Cabinet," is subject only to newspaper postage. To any Post office within thirty miles of Philadelphia, they will go free of charge.

Joseph Rakestraw, Printer.